



Scopus[®] IEEE Xplore[®]
Digital Library

Organized by
COLLEGE OF ENGINEERING &
DEANSHIP OF GRADUATE STUDIES AND SCIENTIFIC RESEARCH

International Conference of Frontiers of Engineering and Emerging Technologies (FET'26)

22-23 April 2026

[Online Conference Link](#)



Bahrain Chapters



Advancing Technology
for Humanity
IEEE BAHRAIN SECTION



BAHRAIN
SOCIETY OF
ENGINEERS



In the Presence

H.E. Dr. Mohamed bin Mubarak Bin Daina

Minister of Oil and Environment,
Special Envoy for Climate Affairs
Kingdom of Bahrain



Conference Chairperson
Dr. Fuad Al Ansari
President of University of Bahrain

Steering Committee



Chair:
Dr. Haifa Ebrahim Al-Khalifa
Dean of College of Engineering,
University of Bahrain



Dr. Athraa S. Abbas Al-Mosawi
Dean of Graduate Studies & Scientific
Research, University of Bahrain



Dr. Mazen Ali
Dean of College of Information
Technology, University of Bahrain

INTRODUCTION

The Organizing Committee welcomes you to the 2026 International Conference on Frontiers of Engineering and Emerging Technologies (FET'26), organized by the College of Engineering at the University of Bahrain (UOB), in collaboration with the Deanship of Postgraduate Studies and Scientific Research. The 2026 conference aims to facilitate a dialogue among researchers, academics, practitioners, and students from different countries, with the theme of "Leveraging Innovations and Computational Intelligence for Engineering Solutions in Sustainable Development."

FET'26 is an energetic interdisciplinary meeting to update the literature on the latest discoveries in various engineering disciplines, as well as offer real field examples of the applications of new technologies. The conference accepted 216 original research papers, reflecting an acceptance rate of 44%. These contributions came from 1,350 authors representing over 50 countries worldwide. The accepted papers will be submitted for inclusion in the IEEE Xplore Digital Library, subject to meeting IEEE's quality standards. We will consider some outstanding papers for extended publication in international journals. Join us on 22–23 April 2026 in Bahrain for this scientific event that celebrates innovation, engineering excellence, and sustainable impact.

TRACKS



Track 1: Smart Operations, Energy Transition, and Process Innovation in the Oil, Gas, and Petrochemical Sectors



Track 2: Advanced Manufacturing, Industrial Technology, and Engineering Management in Industry 5.0+



Track 3: Emerging Technologies and AI Applications in Engineering



Track 4: Advanced Technologies in Power, Energy, and Industrial Systems



Track 5: Innovative and Sustainable Technologies in Architecture Engineering



Track 6: Smart Infrastructure, Construction Technologies, and Transportation Engineering



Track 1: Smart Operations, Energy Transition, and Process Innovation in the Oil, Gas, and Petrochemical Sectors

- AI and Machine Learning for Process Optimization in Refining and Petrochemical Operations
- Digital Twins, Smart Sensors, and IoT Systems for Upstream and Midstream Exploration and Production
- Enhanced Oil Recovery (EOR) and Unconventional Oil and Gas Development Technologies
- Advanced Process Control and Energy Integration in Refining and Petrochemical Systems
- Liquefied Natural Gas (LNG) Production, Processing, and Energy Optimization
- Carbon Capture, Utilization, and Storage (CCUS) and ESG-Driven Low-Carbon Strategies
- Modeling, Simulation, and Operational Optimization of Residue Hydrocracking and Heavy Oil Conversion
- Optimization of Ammonia, Methanol, Urea, and Aromatics Production Systems
- Smart Water Management and Desalination Solutions for Energy-Intensive Industrial Sites
- Catalyst Design, Characterization, and Performance Monitoring in Refining and Petrochemical Processes
- Nuclear Energy Systems and Small Modular Reactors (SMRs): Design, Safety, and Industrial Applications



Track 2: Advanced Manufacturing, Industrial Technology, and Engineering Management in Industry 5.0+

- Industry 4.0/5.0: Components and Applications in Transforming Manufacturing
- Sustainable Manufacturing Practices and Waste Management
- Hybridization and sustainable manufacturing
- Advanced Materials and Sustainable Processing Techniques
- Supply Chain Management and Optimization in Manufacturing
- Leadership and Strategic Management in Engineering Projects
- Quality Management Systems and automation in Advanced Manufacturing
- Design, Modeling, and Optimization in Industrial Engineering
- Risk Management and Safety in Manufacturing Operations
- Innovations in Renewable Energy for Industrial Applications
- Systems Engineering and Integration for Enhanced Manufacturing Efficiency
- Digital Transformation and Process Optimization in Aluminum Smelting and Potline Operations
- Smart Automation, Energy Efficiency, and Emission Reduction in Steel Production and Metallurgical Processes



Track 3: Emerging Technologies and AI Applications in Engineering

- Internet of Things (IoT) Applications and Innovations
- Artificial Intelligence and Machine Learning in Engineering Applications
- Augmented Reality (AR), Virtual Reality (VR), and Digital Twin Technologies
- Robotics, Automation, and AI in Modern Engineering
- Cybersecurity, Blockchain and Privacy in Engineering and ICT
- Quantum Technologies, Nanotechnology, and Nanomaterials
- Predictive and Prescriptive Analytics for Data-Driven Engineering
- Deep Learning, Natural Language Processing, and Text Analytics
- Next-Generation Wireless, Optical, and Satellite Communication Systems
- Big Data Analytics, Edge and Cloud Computing in Engineering Practices
- Healthcare and Biomedical Engineering Technologies
- Digital Transformation and AI-Driven Engineering Optimization



Track 4: Advanced Technologies in Power, Energy, and Industrial Systems

- Renewable & Sustainable Energy Systems
- Energy Storage & Energy Efficiency Technologies
- Power Systems Planning, Operation, and Optimization
- Power System Analysis, Modeling, and Simulation
- Generation, Transmission, and Distribution of Electrical Power
- Power Electronics & Electric Machines (Topologies, Drives, Applications)
- Smart Grids, Microgrids, and Cybersecurity
- Electric & Hybrid Electric Vehicle Technologies
- Power Quality, Reliability, Protection, and Fault Diagnosis
- Automation, Control, and Instrumentation in Power Systems
- AI, IoT, and Communication Technologies in Power & Energy Systems
- Energy Management, Power Markets & Smart Industry Solutions



Track 5: Innovative and Sustainable Technologies in Architecture Engineering

- Digital Twin and Smart Cities
- Climate Change Mitigation, Adaptation and Resilience
- Integration of Artificial Intelligence in Design Applications.
- Generative AI Design technologies.
- Digital Transformations in built environment
- Sustainability Standards and Assessment methods
- Housing Crisis and innovative solutions
- Trends Driving Real Estate Innovation
- Human Factors / Ergonomics and Indoor Comfort Considerations
- Green and Sustainable Interior Design Strategies
- Passive Interior Design System and Innovative Materials



Track 6: Smart Infrastructure, Construction Technologies, and Transportation Engineering

- Advanced Building Information Modeling (BIM) in construction
- Digital transformation and optimization in construction and supply chain management
- Computational structural mechanics and Design Optimization for Smart Infrastructure
- AI modelling for predictive infrastructure analysis (e.g., pavement characteristics)
- AI applications in geomatics and land information systems
- Smart mobility: Emerging trends, case studies, and implementation challenges
- Road safety innovations targeting the “Zero Fatality” vision
- Satellite remote sensing technologies for Infrastructure and Transportation (optical, multispectral, hyperspectral)
- Geographic Information Systems (GIS) and digital mapping with LiDAR/Laser systems
- Geomatics for sustainable Infrastructure management of water, agriculture, and natural resources

Keynote Speakers



Prof. Mérouane Debbah
6G Research Center Director
Khalifa University, UAE
Topic: AI & Communications
Engineering



Prof. Venkat Venkatasubramani
Chemical Engineering
Columbia University
Topic: Computing in Chemical Engineering



Dr. Nasser Kutkut
CEO & Founder, Smart Charging
Technologies, USA
Topic: Industrial IoT



Prof. Moustafa Youssef
American University of Cairo, Egypt
Topic: Quantum Computing for
Engineering Applications



Prof. Shamsad Ahmed
Civil Engineering, King Fahd University
of Petroleum & Minerals
Topic: Advanced structural materials

International Advisory Committee



Prof. Dusanka Boskovic
Minister of Science, High Education and Youth,
Canton Sarajevo. Director of IEEE R8



Prof. Naofal Aldhahir
College of Engineering
University of Texas at Dallas



Prof. Wang Xiaoping
College of Engineering
Nanjing University of Aeronautics and Astronautics ' PR China

Keynote Speaker

Prof. Mérouane Debbah

6G Research Center Director, Khalifa University, UAE



Mérouane Debbah is a Professor at Khalifa University of Science and Technology, Abu Dhabi, and the Founding Director of its 6G Center. He received his M.Sc. and Ph.D. from École Normale Supérieure Paris-Saclay, France. He previously held research and academic positions at Motorola Labs, Vienna Research Center for Telecommunications, and Eurecom, France. From 2007, he served as Full Professor at CentraleSupélec, where he directed the Alcatel-Lucent Chair on Flexible Radio (2007–2014). He later became Vice-President of Huawei France Research Center (2014–2021), leading the Mathematical and Algorithmic Sciences Lab and the Lagrange Research Center. From 2021–2023, he was Chief Researcher at the Technology Innovation Institute, heading the AI & Digital Science Research Centers, and Adjunct Professor at Mohamed Bin Zayed University of AI.

He has led over 30 international projects, holds 50+ patents, and is a Fellow of IEEE, WWRF, EURASIP, AAIA, and Institut Louis Bachelier. His research spans mathematics, algorithms, statistics, information, and communication sciences.

Prof. Debbah has received numerous prestigious awards, including the ERC Advanced Grant (MORE), IEEE Glavieux Prize, Qualcomm Innovation Prize, SEE Blondel Medal, and over 40 best paper awards, such as IEEE Marconi, Abraham, and Ellersick Prizes. He serves as Associate Editor-in-Chief of *Random Matrix: Theory and Applications* and has held editorial roles with *IEEE Transactions on Signal Processing*

Keynote Speaker

Prof. Venkat Venkatasubramani

Samuel Ruben–Peter G. Viele Professor of Engineering, Columbia University, USA



Venkatasubramanian received his BS in chemical engineering from the University of Madras, his MS in Physics from Vanderbilt, and a PhD in chemical engineering from Cornell. He is a fellow of the American Institute of Chemical Engineers, which also awarded him the Computing in Chemical Engineering award in 2009. He joined the faculty of Columbia Engineering in 2012. Prior to that, he taught chemical engineering at Purdue University, where he won the Norris Shreve Prize for outstanding teaching three times.

Keynote Speaker

Dr. Nasser Kutkut

CEO & Founder, Smart Charging Technologies, USA



Nasser Kutkut, Ph.D., D.B.A., is a serial entrepreneur with over 30 years of leadership in battery management, power electronics, and renewable energy technologies. He has founded and co-founded several high-impact ventures focused on innovative battery charging and energy management solutions. From 1998 to 2008, Dr. Kutkut served as Founder and CEO of Power Designers, LLC, where he commercialized advanced high-frequency fast chargers and battery monitoring systems. Between 2015 and 2019, he was Partner and CTO at Advanced Charging Technologies, leading the creation of the industry's first industrial IoT battery chargers. Since 2017, he has been Founder and CEO of Smart Charging Technologies LLC, a company specializing in IoT-based energy management solutions and services.

Dr. Kutkut holds 21 U.S. patents in power electronics, modular charging, solar tracking, and cloud-based battery monitoring. He was a top finalist in the U.S. DOE Future Energy Challenge (2001) and was inducted into the Florida Inventors Hall of Fame (2025). He holds degrees in electrical engineering (JUST, UIC, UW-Madison), an MBA in management and entrepreneurship, and a Doctorate in Business Administration from Grenoble École de Management.

Keynote Speaker

Prof. Moustafa Amin Youssef

Wireless Research Center Director, The American University in Cairo, Egypt



Moustafa Youssef is a professor at The American University in Cairo and founder and director of the Wireless Research Center of Excellence, Egypt. His research interests include mobile wireless networks, mobile computing, location determination technologies, pervasive computing, and network security. He is an associate editor for IEEE TMC and ACM TSAS, served as the lead guest editor of the IEEE Computer Special Issue on Transformative Technologies and an area editor of ACM MC2R as well as on the organizing and technical committees of numerous prestigious conferences. He is the recipient of the 2003 University of Maryland Invention of the Year award, the 2010 TWAS-AAS-Microsoft Award for Young Scientists, the 2013 and 2014 COMESA Innovation Award, the 2013 ACM SIGSpatial GIS Conference Best Paper Award, the 2017 Egyptian State Award, multiple Google Research Awards, among many others. He is also an IEEE and ACM fellow. Visit Youssef's Google Scholar profile for more information.

Keynote Speaker

Prof. Shamsad Ahmed

KFUPM, Advanced structural materials - Department of Civil Engineering, KFUPM, Saudi Arabia



Dr. Shamsad Ahmad is an Associate Professor in the Department of Civil Engineering at King Fahd University of Petroleum & Minerals (KFUPM), specializing in concrete technology, durability of reinforced concrete structures, and corrosion assessment. His research focuses on developing innovative solutions for monitoring, repairing, and rehabilitating concrete structures exposed to aggressive environments, with extensive work on corrosion prediction models, self-compacting concrete using local aggregates, and sulfur concrete applications. Dr. Ahmad has led numerous industry-sponsored projects and published widely on durability indices, permeability-tortuosity relationships, and cost-effective strategies for extending the service life of infrastructure.

Organizing Committee



Chair:
Dr. Hayat Abdulla Yusuf
College of Engineering
University of Bahrain



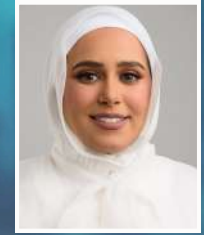
Co-Chair:
Dr. Mohamed Majid Alkhalidy
College of Engineering
University of Bahrain



Publicity Chair:
Dr. Mohamed Bin Shams
College of Engineering
University of Bahrain



Sponsorship Chair:
Dr. Raed Aljowder
College of Engineering
University of Bahrain



Dr. Nuha Al Zayani
College of Engineering
University of Bahrain



Dr. Wafa AlMadani
College of Engineering
University of Bahrain



Dr. Nihal Almerbati
College of Engineering
University of Bahrain



Dr. Hana Al Jowder
College of Engineering
University of Bahrain



Dr. May Khalfan
College of Engineering
University of Bahrain

Technical Program Committee



Chair:
Prof. Mohab Mangoud
College of Engineering
University of Bahrain



Track Chair 1:
Dr. Zakir Hossain
College of Engineering
University of Bahrain



Track Chair 2:
Prof. Ghulam Hussain
College of Engineering
University of Bahrain



Track Chair 3:
Dr. Zuhair Bahri
College of Engineering
University of Bahrain



Track Chair 4:
Prof. Maamar Taleb
College of Engineering
University of Bahrain



Track Chair 5:
Dr. Osama Omar
College of Engineering
University of Bahrain



Track Chair 6:
Dr. Uneb Gazder
College of Engineering
University of Bahrain



Prof. Khaled Zehar
College of Engineering
University of Bahrain



Dr. Salwa Baserrah
College of Engineering
University of Bahrain

Tracks Co-Chairs



Track 1: Prof. Shaikh Abdur Razzak
Department of Chemical Engineering,
KFUPM, Saudi Arabia



Track 2: Prof. Haiyan Zhao
Mechanical Engineering Department,
Tsinghua University, PR China



Track3: Prof. Jacques Demerjian
Lebanese University
Lebanon



Track 4: Dr. Abdulla Alabbasi
Bahrain Center for Strategic, International
and Energy Studies (Derasat), Bahraini



Track 5: Hourakhsh Ahmad Nia
Department of Architecture at Alanya
HEP University, Turkey



Track 6: Prof. Monjur Mourshed
The Alan Turing Institute, School of Engineering
Cardiff University, UK

TPC members (IEEE- Bahrain Section)



Dr. Ali Hussain Zolait
IEEE Bahrain
Section Chair



Eng. Wafeeq Ajoor
ComSoc Bahrain
Chapter Chair



Dr. Resala Aladraj
Computer Society Bahrain
chapter Chair



Dr. Abdulla Qadomi
IEEE Bahrain
Section Secretary



Prof. Isa Qamber
IEEE Bahrain
Conferences Chair

Publication Committee



Chair: Dr. Zainab Ali Redah
College of Engineering
University of Bahrain



Registration chair: Dr. Mohammed Ajmal
College of Engineering
University of Bahrain



Dr. Ayman Alkharzi
College of Engineering
University of Bahrain

TPC (International) Members

Track 1

Smart Operations, Energy Transition, and Process Innovation in the Oil, Gas, and Petrochemical Sectors



Dr. Sudip Rakshit
Chemical Engineering,
Lakehead University, Canada



Prof. Jingxu Zhu
Chemical Engineering, University of
Western Ontario, Canada



Prof. Syed Imtiaz Memorial
University, Newfoundland
Canada

Track 2

Advanced Manufacturing, Industrial Technology, and Engineering Management in Industry 5.0+



Dr. Volkan Esat
University of Hertfordshire, UK



Dr. Aaqib Ali
Oakland University, USA



Dr. Burak Ball
Abdulla Gul University, Turkiye

Track 3

Emerging Technologies and AI Applications in Engineering



Dr. Habib Kamoun
College of Engineering,
University of Sfax, Tunisia



Dr. Nadine Abbas
Lebanese American University,
Lebanon



Prof. Abdel-Hamid Soliman
Staffordshire University
UK

TPC (International) Members

Track 4
Advanced Technologies in
Power, Energy, and Industrial
Systems



Dr. Abdullah Hamed AlBadi
Sultan Qaboos University
Oman



Prof. D. Devaraj Kalasalingam
Academy of Research and Education
India



Prof. Kouzou Abdellah
University of Tiaret
Tiaret, Algeria

Track 5
Innovative and Sustainable
Technologies in Architecture
Engineering



Dr. Paulo Jorge Mendonça
University of Minho, Guimarães
Portugal



Dr. Mehdi Ghiai
College of Health & Human Sciences
Texas Tech University, USA



Dr. Ehab Diab
University of Saskatchewan
Canada

Track 6
Smart Infrastructure,
Construction Technologies,
and Transportation
Engineering



Prof. Stéphane Galland
Université de Technologie de
Belfort Montbéliard, France



Dr. Fatma Outay
College of Technological Innovation
(CIT), Zayed University, Dubai



Dr. Md Arifuzzaman
King Faisal University
Saudi Arabia

TPC members (CoE, UOB)



Dr. Fadehl Albasri
College of Engineering
University of Bahrain



Dr. Islam El-Ghonimy
College of Engineering
University of Bahrain



Dr. Fay A. AlKalifa
College of Engineering
University of Bahrain



Dr. Mahmoud Jahjouh
College of Engineering
University of Bahrain



Dr. Majeed Jasim
College of Engineering
University of Bahrain



Dr. Muhammed Rizwan
College of Engineering
University of Bahrain



Dr. Shaker M. Haji
College of Engineering
University of Bahrain



Dr. Omar -Alabasi
College of Engineering
University of Bahrain



Dr. Yaser Alalawi
College of Engineering
University of Bahrain



Conference Program



Time*	Day (1): 22 April 2026
9:00–9:10	Welcoming Note
9:10–9:15	Welcome Speech by His Excellency the Minister of Oil and Environment, Special Envoy for Climate Affairs Dr. Mohammed bin Mubarak Bin Daina
9:15–9:20	Welcome Speech by His Excellency the President of the University of Bahrain, Dr. Fuad Al-Ansari
9:20–9:30	Conference Speech by the Dean of College of Engineering, Dr. Haifa Al Khalifa
9:20–9:25	Video Presentation on the Conference
9:25-9:55	Keynote Speaker 1: Prof. Venkat Venkatasubramani Samuel Ruben–Peter G. Viele Professor of Engineering, Columbia University, USA Title of speech: AI for Science and the Science of AI
9:55-10:05	“Q&A” for Keynote Speaker 1
10:05-10:35	Keynote Speaker 2: Prof. Mérouane Debbah 6G Research Center Director, Khalifa University, UAE Title of speech: Pioneering Intelligent Connectivity for the Future of Generative AI
10:35-10:45	“Q&A” for Keynote Speaker 2
10:45-10:50	Token of Appreciation by the Dean of College of Engineering, Dr. Haifa Al Khalifa
10:50–11:00	Break
11:00–12:30	Parallel Technical Sessions – Session A
12:30-1:00	Prayer Break
1:00–2:30	Parallel Technical Sessions – Session B
2:30–4:00	Parallel Technical Sessions – Session C
4:00	End of Day 1



Conference Program



Time*	Activity Day (2) 23 April 2026
9:00–09:10	Welcoming Note
09:10–09:40	Keynote Speaker 3: Prof. Shamsad Ahmed KFUPM, Advanced structural materials Department of Civil Engineering, KFUPM, Saudi Arabia Title of speech: Smart and Sustainable Cementitious Materials
09:10–09:40	Keynote Speaker 4: Dr. Nasser Kutkut CEO & Founder, Smart Charging Technologies, USA Title of speech: POWERING AI: Overcoming Infrastructure Bottlenecks with Advanced Power Electronics
09:40–09:50	“Q&A” for Keynote Speakers 3 & 4
09:50–10:20	Keynote Speaker 5: Prof. Moustafa Amin Yousse Wireless Research Center Director, The American University in Cairo, Egypt Title of speech: Quantum Computing for Worldwide 6G and Beyond Cellular Positioning
10:20–10:30	“Q&A” for Keynote Speakers 5
10:30–11:00	Break
11:00–12:30	Parallel Technical Sessions – Session A
12:30–1:00	Prayer Break
1:00–2:30	Parallel Technical Sessions – Session B
2:30–4:00	Parallel Technical Sessions – Session C
4:00	Conference Closing & Acknowledgements



Conference at a Glance

Day 1- 22 April 2026

TIME	Session	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
11:00–12:30	Session A	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8
1:00–2:30	Session B	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8
2:30–4:00	Session C	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8

A-1	AI, Machine Learning & Digital Systems	B-1	Energy Systems, Sustainability & CCUS	C-1	Financial & Business Analytics
A-2	Advanced Manufacturing Processes	B-2	Advanced Materials	C-2	Thermo-Fluids
A-3	AI for Healthcare & Medical Diagnosis	B-3	Medical Imaging & Disease Classification	C-3	Biomedical Signal & Wearable Systems
A-4	Renewable Energy Systems & Applications	B-4	Power Systems, Smart Grids & Energy Management	C-4	Software Engineering & Systems Intelligence
A-5	Innovations in Smart Sustainable Cities: Energy, Materials, and Human-Centric Urban Design	B-5	Advancing Smart and Sustainable Built Environments: AI, BIM, and Energy-Efficient Design	C5	Edge AI & Distributed Systems
A-6	Machine Learning in Construction Materials & Concrete	B-6	Seismic & Structural Response	C-6	Deep Learning for Traffic, Pothole & Damage Detection
A-7	IoT for Smart Healthcare & Environment	B-7	Computer Vision & Detection Systems	C-7	Advanced Image Processing & Segmentation
A-8	Natural Language Processing & LLM Applications	B-8	AI Security & Cyber Threat Detection	C-8	Privacy, Blockchain & Secure Systems

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
Smart Operations, Energy Transition, and Process Innovation in the Oil, Gas, and Petrochemical Sectors	Advanced Manufacturing, Industrial Technology, and Engineering Management in Industry 5.0+	Emerging Technologies and AI Applications in Engineering	Advanced Technologies in Power, Energy, and Industrial Systems	Innovative and Sustainable Technologies in Architecture Engineering	Smart Infrastructure, Construction Technologies, and Transportation Engineering



Conference at a Glance

Day 2 -23 April 2026

TIME	Session	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
11:00–12:30	Session A	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8
1:00–2:30	Session B	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8
2:30–4:00	Session C	C-1	C-2	C-3	C-4	C-5	C-6	C-7	

A-1	Process Systems, Modeling & Industrial Applications	B-1	Sustainable Mobility, Smart Infrastructure & Digital Twins	C-1	Wireless, Communication & Networkin
A-2	Sustainable Practices in Industry	B-2	Engineering Management	C-2	Emerging Technologies
A-3	Optical, RF & Antenna Systems	B-3	Robotics, UAVs & Autonomous Systems	C-3	Quantum Computing & Cryptography
A-4	Power Electronics & Control Systems	B-4	AI, Optimization & Smart Engineering Applications	C-4	Optimization & Intelligent Algorithms
A-5	Towards Intelligent and Sustainable Built Environments: AI, Design Innovation, and Performance-Based	B-5	Smart and Sustainable Architecture: Integrating AI, Human-Centric Design, and Building Performance	C5	Knowledge Graphs & Data Engineering
A-6	Autonomous & Electric Vehicles, Driving Behavior, and Emissions	B-6	Road Safety, Accident Severity & Pedestrian Behavior	C-6	Cybersecurity, Environmental Quality & Climate Data
A-7	Explainable AI & Ethical AI	B-7	Smart Cities & Intelligent Systems	C-7	Industrial AI & Applications
A-8	Reviews & Survey Papers	B-8	Emerging AI & Future Technologies		

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
Smart Operations, Energy Transition, and Process Innovation in the Oil, Gas, and Petrochemical Sectors	Advanced Manufacturing, Industrial Technology, and Engineering Management in Industry 5.0+	Emerging Technologies and AI Applications in Engineering	Advanced Technologies in Power, Energy, and Industrial Systems	Innovative and Sustainable Technologies in Architecture Engineering	Smart Infrastructure, Construction Technologies, and Transportation Engineering



Parallel Sessions Details

Parallel Session A

11:00–12:30

Track 1


Session A-1: AI, Machine Learning & Digital Systems

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. S M Zakir Hossain

Dr. Ayman Al-Khazraji

No.	Title	Room 1
1	Artificial Intelligence solution for flotation froth load prediction Abdullatif Alnajim (Yokogawa Saudi Arabia Company, Saudi Arabia); Razan Mohammed Alzannan (Yokogawa Electric Corporation, Saudi Arabia); Erich Marko Lucic Oliva (Yokogawa America Do Sul, Chile); Mustafa Alnaser (Yokogawa Saudi Arabia, Saudi Arabia) [1571240598]	
2	Machine-Learning-Based Soft Sensing for Real-Time Monitoring of Crude Oil Distillation Products Bassam Mohamed AlHamad, Zahra Ahmed Taqi, Bayan Abdulla Almarzooq and Sahar Ahmed Alsardeya (University of Bahrain, Bahrain) [1571242312]	
3	Reliability Assessment of AI-Based Control Systems in Oil Refineries Yousef Ismail Al Mashhadany (University of Anbar, Iraq); Thabit Rabeaa Abduljabbar (North Refineries Company, Iraq); Sameer Algburi (Al-Kitab University, Iraq) [1571249791]	
4	Reinforcement Learning for Temporal Energy Storage Operations Saeed Serwan Abdulsattar (University of Bahrain, Bahrain); Ayman Al-khazraji (UOB, Bahrain); Abdulla Alabbasi (Director of Energy, Bahrain) [1571249889]	
5	Digital Twin-Driven Refinery Energy Optimization Using Reinforcement Learning Tanisha Chitra (Chandigarh University, India) [1571251202]	
6	DriftShield Soft Sensor Design for Product Quality Prediction Manishka Chitra (Chandigarh University, India) [1571251215]	



Track 2


Session A-2: Advanced Manufacturing Processes

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Riaz Muhammad

Dr. Osama Al-Jamal

No.	Title	Room 2
1	<p>Voice Augmented Ultrasonic Vibration driven fluidity improvement in sand Casting process Md. Anayet Ullah Patwari, Shah Alam Bhuiyan, Ruckser A Nipun, Rubaiyet S Nijhum and Mahmudul Firoz (Islamic University of Technology (IUT), Bangladesh) [1571236389]</p>	
2	<p>Welding Speed Effects on Thermal Behavior and Penetration in Laser Welding of SS316 Using FEA J Syam Sundhara, Harinadh Vemanaboina and Hemanth Kandala (VEMU Institute of Technology, India); Mohd Rizal Alkahari (Universiti Teknikal Malaysia Melaka, Malaysia); KLN Murthy (Sreyas Institute of Engineering and Technology, India); Ahmad Johar MA Pangiran (Universiti Teknikal Malaysia Melaka, Malaysia) [1571242075]</p>	
3	<p>Laser-Programmed Wettability for Selective Metallization of High-Performance Polymers in 3D Electronics Yutong Cao, Jiayun Pei, Weiye Jin, Xingjian Hu and Haiyan Zhao (Tsinghua University, China) [1571244081]</p>	
4	<p>Investigation of a Finite Element He Electron Scattering at Source Model for Electron Beam Welding Considering Kun Cui and Pu Xie (Tsinghua University, China); Pengfei Fu (AVIC Manufacturing Technology Institute, China); Haiyan Zhao (Tsinghua University, China) [1571249119]</p>	
5	<p>Statistical Analysis of Process Parameters for Laser Micro Machining in Inconel 718: A Pilot Study for Laser-Hybrid Micro Machining Ahmad Waqar Tehami, Muhammad Rizwan ul, Niaz Bahadur Khan, Ashfaq Khan, Muhammad Ayaz Ahmad and Shahid Ikramullah Butt, Mushtaq Khan [1571253663]</p>	



Track 3

Session A-3: AI for Healthcare & Medical Diagnosis

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. May Khalfan

Mrs. Lejla Karajica

No.	Title	Room 3
1	<p>A Multimodal CNN-BiLSTM Framework for Early Cardiopulmonary Disease Detection Arwa Salem Yalos Alenezi (UOB, Bahrain); Mohammed Majid M Al Khalidy (University of Bahrain & Engineering College, Bahrain) [1571242037]</p>	
2	<p>Early Breast Cancer Detection in Mammograms Using Machine Learning and Deep Learning Techniques Media A Ayu (Nusa Putra University, Indonesia); Ryan Ahasan Al-Helal (Sampoerna University, Indonesia) [1571242269]</p>	
3	<p>An Interpretable Framework for Diabetes Prediction on Multidimensional Health Data using CatBoost Shariar Islam Shoikot, Erin Taz, Tashin Ishayat and Rubaiyat Islam (American International University - Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249591]</p>	
4	<p>Predicting Maternal Health Risk Levels in Rural Bangladeshi Patients Using Supervised Machine Learning Md. Shakil Mia and Sheikh Risalat Sanjan (American International University-Bangladesh, Bangladesh); Kazi Tanvir (American International University - Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249375]</p>	
5	<p>Smart Bed with Vital Signs Monitoring: ML-Driven Calibration, Agreement Testing, and Reliability Scoring Maria Lynette P. De los Santos, Menchie E Sales, Sheena Danielle R. Yacaba, Maurine C. Panergo, Zoren P Mabunga, Efren D. Villaverde and Renato R. Maaliw (Southern Luzon State University, Philippines) [1571241461]</p>	



Track 4


Session A-4: Renewable Energy Systems & Applications

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Rajamohamed Sumsudeen

Dr. Mostefa Ghassoul

No.	Title	Room 4
1	Performance Analysis of a Rooftop Grid Connected PV System Considering MPPT and Shading Losses: A Case Study in Bahrain Raja Mohamed M Sumsudeen (University of Bahrain, Bahrain); Sreedivya K M (Carmel College of Engineering and Technology, India) [1571235515]	
2	Hybrid Renewable Power Systems for Grid Connection: Modelling, Simulation, Control and Performance Analysis Ziyad Tariq Al-Salmay, Shahd Fadhil Jaber and Yousif Ismail Al Mashhadany (University of Anbar, Iraq); Kasim Mousa Al-Aubidy (Tishk International University & Director, AI Research Center, Iraq); Sameer Algburi (Al-Kitab University, Iraq) [1571248836]	
3	Investigating the Potential of Floating Solar Photovoltaic Systems in Bahrain Mohamed Alsayed, Ahmed Abdalla and Mohammed Redha Qader (University of Bahrain, Bahrain) [1571249413]	
4	Innovative Use of Desert Resources for Renewable Energy Storage and Conversion in the Gulf Region Hamzeh Aljarajreh and Dana Mahdi Khuraibet (Australian University - Kuwait, Kuwait) [1571240289]	
5	Integrating DEM-Based Terrain Analysis and Bin-Packing Algorithms for Solar Farm Site Suitability and Land-Use Optimization Jay Bee T. Piliin, Lawrence M. Liwanag and Sunshine N. Ramiento (Laguna State Polytechnic University - Siniloan, Philippines); Mervin Jommel T. De Jesus (Laguna State Polytechnic University, Philippines) [1571253887]	



Track 5


Session A-5: Innovations in Smart Sustainable Cities: Energy, Materials, and Human-Centric Urban Design

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Osama Omar

Dr. Huda Almadhoob

No.	Title	Room 5
1	Navigating Challenges in the Smart Transformation of Historic Cities and Embracing Technological Innovations Parminder Kaur, Prateek Dhasmana, Niva Turna and Kanika Bansal (Chitkara School of Planning and Architecture, Chitkara University, Punjab, India) [1571236412]	
2	Design and Energy Performance Analysis of a Low-Power Solar-Assisted Indoor Air Purification System for Sustainable Buildings Mustafa Ammar (University of Bahrain, Bahrain); Nadya Alshareeda (College of Administrative Sciences, Bahrain) [1571236490]	
3	Human-Centric Smart Public Open Spaces in Hot Climates: A Conceptual Matrix Framework with Implications for Bahrain Nazish Abid (University of Bahrain, Bahrain); Sagarika Nayak (Canada); Mazharul Haque (National Institute of Technology Patna, India) [1571240277]	
4	Evaluating the impact of water-repellent Rockwool on enhancing the energy performance of Veneer brick walls Omid Reza Baghchesaraei (Centre for Infrastructure Engineering, Australia) [1571240329]	
5	Preliminary investigation of Urban Vertical Greening for a Dense Residential Area in Bahrain Motaz Mestarehi and May Khalfan (University of Bahrain, Bahrain) [1571240628]	



Track 6


Session A-6: Machine Learning in Construction Materials & Concrete

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Muhammad Ajmal

Prof. Mustafa AYTEKIN

No.	Title	Room 6
1	Data-Driven Construction Cost Forecasting and Optimization: An XGBoost-Based Approach Enhanced by Bayesian Methods and SHAP Values Umaira Shahid (Brains Institute, Pakistan); Waqas Arshad Tanoli (King Faisal University, Saudi Arabia); U Gazder (UoB, Bahrain) [1571230169]	
2	A Comparative Study of Artificial Neural Network Architectures for Predicting the Compressive Strength of Jute Fiber Reinforced Concrete Muhammad Ajmal (University of Bahrain, Bahrain); Danish Ahmed (Prince Mohammad Bin Fahd University, Saudi Arabia); Ahmed Abdulla Alali, Hassan Reyadh Aljaidah and Mona Abdullatif (University of Bahrain, Bahrain); Sani I. Abba (Prince Mohammad Bin Fahd University, Saudi Arabia) [1571242529]	
3	Compressive Strength Assessment of Waste Glass Powder Concrete Using Linear Regression and Random Forest Models Muhammad Iftikhar Khan (Qassim University, Saudi Arabia); Mohammed K. Alkharisi and Hany A. Dahish (Qassim University, Buraidah, Saudi Arabia) [1571250852]	
4	Sustainable Ground Improvement Using Hybrid EAF Slag-Limestone Stone Columns: Environmental and Geotechnical Assessment Mohamed Neanaa (King Fahad University of Petroleum and Minerals, Saudi Arabia); Umair Ali and Mubashir Aziz (King Fahd University of Petroleum and Minerals, Saudi Arabia) [1571253986]	
5	Integrity Loss Mechanism in Alkali-Activated Waste Glass Powder Stabilized Soil under Carbon Curing Berjees Irshad Qadri, Umair Ali and Mubashir Aziz (King Fahd University of Petroleum and Minerals, Saudi Arabia) [1571253992]	



Track 3

Session A-7: IoT for Smart Healthcare & Environment

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Fay Alkhalifa

Dr. Sahar Abdelrahman

No.	Title	Room 7
1	<p>Performance Prediction of RPL-based Healthcare Monitoring System: A Machine Learning Approach</p> <p>Amneh Al Abdi (King Fahd University of Petroleum and Minerals Dhahran, Saudi Arabia); Basem Madani and Farouq Muhammad Aliyu (King Fahd University of Petroleum and Minerals, Saudi Arabia); Aliyu Musa Bade (Yobe State University, Nigeria) [1571232886]</p>	
2	<p>An IoT-Enabled Solar-Powered Rainwater Harvesting and Filtration System with Machine Learning-Based Water Quality Prediction</p> <p>Amina Asif, Sarah Saeed and Muhammad Zaheer (Air University, Pakistan) [1571240988]</p>	
3	<p>Real-Time Predictive and Optimized Hospital Resource Management Using Intelligent Machine Learning</p> <p>Syed Sabit Hossain (American International University - Bangladesh, Bangladesh); Al Rafat Khandokar (American International University-Bangladesh, Bangladesh); Md. Faruk Abdullah Al Sohan (University of Malaya, Malaysia); Saeeda Sharmeen Rahman (American International University-Bangladesh, Bangladesh) [1571253996]</p>	
4	<p>Real-Time Smart City Decision and Resource Optimization Using 5G-Enabled ML and IoT</p> <p>Md. Abdul Malek Sobuj (American International University - Bangladesh, Bangladesh); Sadia Akter (University of Dhaka, Bangladesh); Pronoy Kanti Bhowmick (American International University-Bangladesh, Bangladesh); Md. Faruk Abdullah Al Sohan (University of Malaya, Malaysia); Afroza Nahar (American International University-Bangladesh, Bangladesh) [1571251200]</p>	
5	<p>Self-Righting Seedling Support System: A Microcontroller-Based Closed-Loop Tilt-Sensor with IoT Notifications for Precision Agriculture</p> <p>Junvier Renze A Bobis, Mae Christine Cilot, Juliana C Naval, John Joshua F. Montañez and Donna T. San Antonio (Bicol State College of Applied Sciences and Technology, Philippines); Roy Dialogo Tipones (Bicol State College of Applied Sciences and Technology & Mapua University, Philippines) 1571253890]</p>	



Track 3

Session A-8: Natural Language Processing & LLM Applications

Session time Wed, Apr 22 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Mohammed Al Khalidy

Dr. Zuhair Bahri

No.	Title	Room 8
1	<p>LEOPARD: A Structured LLM Orchestration Framework for Precision-Centric Grammatical Error Correction</p> <p>Nazmus Saqueeb Ashrafi (United Arab Emirates University (UAEU), United Arab Emirates); Mohammed Mediani (United Arab Emirates University, United Arab Emirates); Salah Bouktif (UAE University, United Arab Emirates) [1571242146]</p>	
2	<p>RoBERTa-based Emotion Detection using Ekman Mapping: A Multi-Label Classification Approach on Go-Emotions Dataset</p> <p>Mutez Rahal and Buket Kaya (Firat University, Turkey) [1571242491]</p>	
3	<p>Framing Bias Index: Interpretable NLP Framework for Measuring Linguistic Bias in News Reporting</p> <p>Aatika Kamal and Abuzar Saeed (Jamia Hamdard, India); Zeeshan Ali Haq (Jamia Hamdard University, India) [1571242478]</p>	
4	<p>Comparing Beam And Greedy Decoding For Accurate And Efficient Handwriting Recognition In Engineering Applications</p> <p>Folashade Bilikis Jimoh (Edo State University, Iyamho, Nigeria); Joshua Nehinbe (Edo State University, Iyamho, Nigeria); John Temitope Ogbiti (EdoState University, Iyamho, Nigeria) [1571239538]</p>	



Parallel Session B

1:00–2:30

Track 1

Session B-1: Energy Systems, Sustainability & CCUS

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Hayat Abdulla Yusuf

Dr. Mohammed Al Khalidy

No.	Title	Room 1
1	Comparative Study of Powder MOF-303 and In-Situ Coated MOF-303 on Stainless Steel Mesh for Lithium Adsorption from Aqueous Solutions Safiah Almuqhawwi (University of Birmingham, United Kingdom (Great Britain)) [1571228476]	
2	Modeling Temperature Swing Adsorption for CO₂/N₂ Separation Using the Metal-Organic Framework Co₃(ndc)₃(dabco) Omar Mohamed, Ahmed M Abdulsalam, Nasser Al-Maskari, Raya Al-Dadah and Saad Mahmoud (University of Birmingham, United Kingdom (Great Britain)) [1571234870]	
3	Physics-Informed Surrogate Optimization of Multi Stage CO₂ Compression Trains for CCUS Applications Manishka Chitra (Chandigarh University, India) [1571251216]	
4	AI-Enhanced Digital Twin for Carbon Capture and Storage in Extreme Climate Conditions: A Bahrain Case Study Aryaman Ahuja (Delhi Technological University (DTU), India); Aryan Dutta (Delhi Technological University, India) [1571251261]	
6	Automated Nanofiltration-Electrodialysis Reversal (NF-EDR) Brine Concentration System for Salt Production in the Philippines Rex Basuel (Pangasinan State University, Philippines) [1571243802]	



Track 2

Session B-2: Advanced Materials

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Zahir Hanouf

Dr. Osama Al-Jamal

No.	Title	Room 2
1	<p>High Temperature Oxidation Resistance and Characteristics of Coated Low Carbon Steel</p> <p>Sattar A. Mutlag (University of Anbar, Iraq); Kadhum Ahmed Abed (University of Anbar, Iraq); Yousif Ismail Al Mashhadany (University of Anbar, Iraq) [1571241037]</p>	
2	<p>Energy Absorption of Re-Entrant Auxetic Structures Fabricated from Multiple Thermoplastic Materials</p> <p>Asma Ameen (University of Punjab, Pakistan); Babar Ashfaq (Sarhad University of Science & Information Technology, Peshawar, Pakistan); Aftab Ahmad (Sarhad University of Science and Information Technology, Pakistan); Ghulam Hussain (University of Bahrain, Bahrain) [1571242083]</p>	
3	<p>Prediction of Residual Stress and Distortion in Laser powder Bed Fused SS316L Impeller using Coupled Thermomechanical FEA</p> <p>Jayaprakash Sharma Panchagnula (Birla Institute of Technology and Science, India); Rajesh Goud Kanthi (University of Technology and Applied Sciences, Oman); Harinadh Vemanaboina (VEMU Institute of Technology, India); Cheruku Vasavi (Sreyas Institute of Engineering and Technology, India); Kishore Kumar Panchagnula (Vignana Bharathi Institute of Technology, India); Veera Raghavulu K (Marri Laxman Reddy Institute of Technology & Management, India) [1571253956]</p>	
4	<p>Effect of Solution Heat Treatment Parameters and Quenching Media on the Hardness of Aluminum Alloy 2024</p> <p>Ilham Saputra, Is (National Yunlin University of Science and Technology, Taiwan & Universitas Gadjah Mada, Indonesia); Syahrul Aminudin (Politeknik Negeri Batam, Indonesia); Aulia Fajrin (Batam Polytechnic, Indonesia); Nurul Fadilah (Politeknik Negeri Batam, Indonesia); Adhitomo Wirawan (Politeknik Negeri Batam, Indonesia); Adhan Efendi (National Chin-Yi University of Technology, Taiwan); Meschac Timothee Silalahi (Politeknik Negeri Batam, Indonesia) [1571245715]</p>	
5	<p>Bibliometric Analysis of the Mechanical Property of Doped 3D Printed Materials</p> <p>Abdulkareem Alhazoom (University of Bahrain, Bahrain); Riaz Muhammad (University of Bahrain, Bahrain); Ghulam Hussain (University of Bahrain, Bahrain) [1571244468]</p>	



Track 3

Session B-3: Medical Imaging & Disease Classification

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Fatema Albalooshi

Dr. Abdulla Desmal

No.	Title	Room 3
1	<p>An Explainable Vision Transformer-CNN Fusion Framework with Grad-CAM Visualization for Accurate Multi-Stage Alzheimer's Disease Classification from MRI</p> <p>Priyanka Priyanka (Maharishi Markandeshwar (Deemed to be University), India); Ambuj Agrawal (Theerthankar Mahavir University, India); Jasveer Kaur (MRSPTU Bathinda, India); Manik Rakhra (Lovely Professional University, India); Amandeep Kaur (CGC University Mohali, India); Shiva Mehta (Chitkara University, Rajpura, India) [1571241052]</p>	
2	<p>Explainability-Driven Feature Selection and Ensemble Learning for EEG-Based Alzheimer's Staging</p> <p>Esra Yüzgeç Özdemir (Firat University, Turkey); Fatih Özyurt (Firat University, Turkey) [1571251052]</p>	
3	<p>An Explainable Vision Transformer-CNN Fusion Network for Automated Gastrointestinal Disease Classification</p> <p>Krishan Tuli (Maharishi Markandeshwar (Deemed to be University), India); Ambuj Agrawal (Theerthankar Mahavir University, India); Shiva Mehta (Chitkara University, Rajpura, India); Manik Rakhra (Lovely Professional University, India); Jyoti Jyoti (School of Advance Computing, India) [1571241045]</p>	
4	<p>RankSVM Integrated Quality Function Deployment Framework: Evaluating for M-Health Applications</p> <p>Elifnaz Olgac (Yildiz Technical University, Turkey); Ali Karasan (Yildiz Technical University, Turkey); İhsan Kaya (Yıldiz Technical University, Turkey) [1571253600]</p>	



Track 4

Session B-4: Power Systems, Smart Grids & Energy Management

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Hunsy Alzubair

Prof. Khaled Zehar

No.	Title	Room 4
1	<p>Neural Network-Based Adaptive Damping for Virtual Synchronous Generator Control of Grid Forming Inverters in Weak Grids</p> <p>Aminu Jibrin Aliyu (Universiti Teknologi Petronas, Malaysia & Ahmadu Bello University, Nigeria); Ramani Kannan (Universiti Teknologi Petronas, Malaysia); Eric Tatt Wei Ho (Universiti Teknologi PETRONAS & Center for Intelligent Signal & Imaging Research, Malaysia) [1571234457]</p>	
2	<p>Assessing Renewable Energy Deployment and Energy Security in the GCC: A Project Pipeline- Based Target Alignment Analysis (2030–2050)</p> <p>Aqeela Alawi Sayed Mohsen Al-Alawi (University of Bahrain, Bahrain); Fatema Albalooshi (University of Bahrain, Bahrain); Mohammed Redha Qader (University of Bahrain, Bahrain) [1571238252]</p>	
3	<p>AI-Based Energy Management and Demand Forecasting for Smart Grids with High Renewable Penetration</p> <p>Mohammad Abu Kausar (University of Nizwa, Oman); Mohammad Nasar (Mazoon College, Muscat, Oman) [1571242138]</p>	
4	<p>Adaptive Cross-Location Uncertainty Quantification for Wind Power Forecasting Using GRU Networks</p> <p>Mohammad Samar Ansari (University of Chester, United Kingdom (Great Britain)); Özlem Bayram (University of Chester, United Kingdom (Great Britain)) [1571240313]</p>	
5	<p>Comparative Uncertainty Modeling for Rooftop PV Forecasting: Deterministic, Stochastic, and ML Integration</p> <p>Zahra Radhi A. Salman (University of Bahrain, Bahrain); Minwir Al-Shammari (University of Bahrain, Sakhir, Bahrain) [1571242178]</p>	



Track 5

Session B-5: Advancing Smart and Sustainable Built Environments: AI, BIM, and Energy-Efficient Design

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Anamika Jiwane

Dr. Nehal Almurbati

No.	Title	Room 5
1	Design and Evaluation of Palm-Fiber-Reinforced Adobe Bricks for Outdoor Passive Cooling Applications in Bahrain Omaima Alabbasi (University of Bahrain, Bahrain) [1571241088]	
2	Sustainable Urban Regeneration of Msheireb Downtown Doha: A Replicable Model for Heritage-Driven Real Estate Development in the Gulf M. Saad Hanif Haji (University of Bahrain, Bahrain &, Eastern Mediterranean University, Cyprus); Anamika Jiwane (University of Bahrain, Bahrain) [1571241760]	
3	Exploratory Insights into Energy-Efficient Post-Pandemic Mid-Rise Housing in Bahrain Avni Durga Hemanth (University of Bahrain, Bahrain); May Khalfan (University of Bahrain, Bahrain) [1571242153]	
4	When Knowledge Centres Think: The Role of AI in Shaping Participatory Cultural Spaces Ali Abdulshaheed Mansoor Ebrahim (University of Bahrain, Bahrain); Najla Allani (University of Bahrain, Bahrain) [1571242234]	
5	AI-based BIM for facility management: insights from practical applications Khalil Idrissi Gartoumi (Moulay Ismail University (UMI), Morocco); Ali H Zolait (University of Bahrain, Bahrain); Aawag Mohsen Alawag (UITM, Malaysia); Cédric Stéphane Tékouabou Koumético (Chouaib Doukkali University of El Jadida, Morocco) [1571245578]	



Track 6

Session B-6: Seismic & Structural Response

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Wafa Al-Madani

Dr. Mona Abdullatif

No.	Title	Room 6
1	Structural Response of Traditional Rammed Earth Buildings to Strong Seismic Excitation Yousra El Hankouri (Université Abdelmalek Essaadi, Morocco); Abdelouafi El Ghoulbzouri (University of Abdelmalek Essaadi, Morocco) [1571219970]	
2	Fluid analysis in Fluent for calculation of the pressure exerted by fresh concrete during placement Omid Reza Baghchesaraei (Centre for Infrastructure Engineering, Australia) [1571240332]	
3	Sustainable Design Optimization of CFST Arch Bridge System Using Artificial Bee Colony Algorithm Ali Mearaj (University of Bahrain, Bahrain); Yusuf Nasser (University of Bahrain, Bahrain); Al Mahdi Mustafa (University of Bahrain, Bahrain); Mona Abdullatif (University of Bahrain, Bahrain); Ahmed Abdulla Alali (University of Bahrain, Bahrain); Muhammad Ajmal (University of Bahrain, Bahrain) [1571251297]	
4	Neural Network-Based Prediction of Optimized Design Parameters for Reinforced Concrete Bridge Superstructures Mahmoud Jahjough (University of Bahrain, Bahrain); Semih Erhan (University of Bahrain, Bahrain); Ahmed Suliman B Ali (Universiti Teknologi MARA, Malaysia) [1571249642]	
5	Enhancing Change-Centric Building Damage Assessment using Class-Aware Augmentation and Lightweight MobileNet Classification Amina Asif (Air University, Pakistan); Kiran Sultan (Chester University, United Kingdom (Great Britain)); Nkosi Mpofu (Chester University, United Kingdom (Great Britain)); Muhammad Habib Mahmood (Teradata, Pakistan) [1571241365]	



Track 3

Session B-7: Computer Vision & Detection Systems

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chair

Dr. Nidal Dahman

No.	Title	Room 7
1	<p>Real-Time Social Distancing Monitoring with CLAHE-Enhanced YOLOv8 Detection</p> <p>Suardi Kaharuddin (Universiti Sains Malaysia, Malaysia); Syed Sahal Nazli Alhady Syed Hassan (Universiti Sains Malaysia, Malaysia); Francis Tan Jun Yong (Universiti Sains Malaysia, Malaysia); Mohd Nadzri Mamat (Universiti Sains Malaysia, Malaysia); Mohamad Nazir Abdullah (School of Electrical and Electronic Engineering, Universiti Sains Malaysia, Malaysia) [1571241091]</p>	
2	<p>MS-YOLOv12: An Enhanced Real-Time Recyclable Waste Detection and Classification Framework</p> <p>Aminun Nahar (American International University-Bangladesh, Bangladesh); Mehedi Hasan Shuvo (American International University-Bangladesh, Bangladesh); Mahbulul Islam (American International University-Bangladesh, Bangladesh); Rifat Tasnim Anannya (American International University- Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571242334]</p>	
3	<p>Gas Flare Detection System based on YOLO Technique</p> <p>Zainab Ali Khalaf (University of Basrah, Iraq); Ammar A. Altuma (University of Basrah, Iraq) [1571246769]</p>	
4	<p>Counterfeit Currency Detection Using Deep Learning Techniques</p> <p>Sadeq Al-Suhemat (Instructor, Jordan); Khalid Alemerien (Tafila Technical University, Jordan) [1571251313]</p>	
5	<p>Efficient Deep Learning Framework for Crop and Disease Classification on Mobile and Edge Devices</p> <p>Fahima Sultana Smrity (American International University-Bangladesh, Bangladesh); Md. Ibrahim Tanjim (American International University-Bangladesh, Bangladesh); Md. Faruk Abdullah Al Sohan (University of Malaya, Malaysia); Afroza Nahar (American International University-Bangladesh, Bangladesh) [1571253935]</p>	



Track 3

Session B-8: AI Security & Cyber Threat Detection

Session time Wed, Apr 22 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Ayman Alkhazraji

Dr. Ali Hussain Zolait

No.	Title	Room 8
1	<p>Proactive AI and Machine Learning Strategies for Network Threat Detection with Adaptive Explainable Intelligence</p> <p>Md Monayem Islam (Islamic University Kushtia, Bangladesh); Erin Akhter Tonny (Varendra University, Bangladesh); Mehedi Hasan Shuvo (American International University-Bangladesh, Bangladesh); Mahbubul Islam (American International University-Bangladesh, Bangladesh); Aminun Nahar (American International University-Bangladesh, Bangladesh) [1571242471]</p>	
2	<p>Intrusion Detection System Powered Smart IP Camera</p> <p>Amna Mohammed Abdulla (UoB, Bahrain); Mohab A Mangoud M (University of Bahrain, Bahrain) [1571253839]</p>	
3	<p>Designing a Lightweight Cybersecurity Framework for Enhancing the Security of Smart Home IoT Devices</p> <p>Talal Delaimm (University of Bahrain, Bahrain); Wael M El-Medany (University of Bahrain, Bahrain) [1571237641]</p>	



Parallel Session C

2:30–4:00

Track 3


Session C-1: Financial & Business Analytics

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Yaser Al-Alawi

Dr. Zahir Hanouf

No.	Title	Room 1
1	Transformer Learning for Financial Fraud Detection on Digital Payment Systems Virendra Singh Chawra (USA); Vivek Nayan (Indus Action, India); Vishal Nayan (Duck Creek Technologies, USA) [1571240782]	
2	Optimal Deep Belief Network for Online Banking Fraud Detection On Digital Financial Services Virendra Singh Chawra (USA); Shailesh Sayarmal Chaudhary (Amazon, USA); Sagar Gupta (EST03 Inc., USA) [1571240783]	
3	Omni-Modal Stock Market Volatility Forecasting Using Hybrid Sentiment and Financial Indicators with Machine Learning Anju B. Nandrajog (Apex Institute of Management (AIM) Chandigarh University, Gharuan (Mohali)Punj, India); Priyanka Salgotra (Maharishi Markandeshwar Institute of Management, India); Kawal Nain Singh (CGC University Mohali, India); Punjika Rathi (KSOM KIET Group of Institutions, India); Sargam Mehta (Punjabi University, Patiala, India) [1571242237]	
4	Deep Reinforcement Learning for Dynamic Optimization of Complex Portfolio Systems Rabab Alasbool (University of Bahrain, Bahrain); Mohab A Mangoud M (University of Bahrain, Bahrain) [1571253708]	
5	Employee Attrition Prediction Using Optimized Ensemble Learning for Engineering Management Abdullah Mohammed Sharaf (Taiz University, Yemen); Mogebeeb Saeed (Taiz University, Yemen); Saleem Ahmed Hezam Sallam Al-Azazi (Taiz University & International Organization for Migration IOM, Yemen) [1571236309]	



Track 2

Session C-2: Thermo-Fluids

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Omar Al-Abbasi

Dr. Niaz Khan

No.	Title	Room 2
1	<p>Active Closed-Loop Feedback Temperature Monitoring and Intervention for Enhanced Modular PV Panel Cooling</p> <p>Arlan O Callada (Bicol State College of Applied Sciences and Technology, Philippines); Melody P Cerdon (Bicol State College of Applied Sciences and Technology, Philippines); Siemn Enst Garay (Bicol State College of Applied Sciences and Technology, Philippines); John Joshua F. Montañez (Bicol State College of Applied Sciences and Technology, Philippines); Donna T. San Antonio (Bicol State College of Applied Sciences and Technology, Philippines); Roy Dialogo Tipones (Bicol State College of Applied Sciences and Technology & Mapua University, Philippines)</p> <p>[1571239279]</p>	
2	<p>A Bibliometric Analysis of Transcritical CO2 Cooling Systems</p> <p>Ahmed Sameer Ata (University of Bahrain, Bahrain); Omar Al-Abbasi (University of Bahrain, Bahrain); Riaz Muhammad (University of Bahrain, Bahrain)</p> <p>[1571245215]</p>	
3	<p>Thermodynamic Modeling of a Desiccant Dehumidifier and Transient Analysis of an Evaporative Cooling System for Humid Regions</p> <p>Hasan Ebrahim (University of Bahrain, Bahrain); Hassan Mohamed Jaffer Alajmi (University of Bahrain, Bahrain); Ali Hasan Salman (University of Bahrain, Bahrain); Abdul Waheed Badar (University of Bahrain, Bahrain); Syed Maaz Hasan (National University of Sciences and Technology, Pakistan)</p> <p>[1571252716]</p>	
4	<p>Integrated Analytical, Numerical, and Experimental Study of a Photovoltaic–Thermal Solar Air Collector</p> <p>Abdul Waheed Badar (University of Bahrain, Bahrain); Mohammed Ahmed Abbas Sultan (University of Bahrain, Bahrain); Hussian Saeed Hussian (University of Bahrain, Bahrain); Syed Maaz Hasan (National University of Sciences and Technology, Pakistan); Salman Mohamed Salman (University of Bahrain, Bahrain); Muhammad Salman Siddiqi (Norwegian University of Life Sciences, Ås, Norway)</p> <p>[1571252961]</p>	
5	<p>Thermal Modeling, Development, and Experimental Evaluation of a Double-Pass Solar Air Heater</p> <p>Mohamed Yaseen Mohamed Hubail (University of Bahrain, Bahrain); Syed Maaz Hasan (National University of Sciences and Technology, Pakistan); Ali Aqeel Ali Mohamed (University of Bahrain, Bahrain); Abdul Waheed Badar (University of Bahrain, Bahrain); Mahmood Jasim Abdulla Abbas (University of Bahrain, Bahrain)</p> <p>[1571252963]</p>	



Track 3

Session C-3: Biomedical Signal & Wearable Systems

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chair

Dr. Mostefa Ghassoul

No.	Title	Room 3
1	Hybrid Analog-Digital Filtering for Motion Artifact Reduction in Pulse Oximetry Marwa Alsaleem (Al Akhawayn University, Morocco); Sarah Ouahbi (Al Akhawayn University, Morocco); Saad Benmaalla (Al Akhawayn University, Morocco); Yassine Salih-Alj (Al Akhawayn University, Morocco) [1571229928]	
2	LoRaWAN-Based Emergency Response Multi-Purpose Wearable Device for Assisting the Elderly Roldeo Rien Asuncion (De La Salle University, Philippines); Gerald P Arada (De La Salle University, Philippines); Abigail Joy Leoncio (De La Salle University, Philippines); Karla Sammer Manalili (De La Salle University, Philippines); Maxine Jane Rodrin (De La Salle University, Philippines) [1571242058]	
3	A Smart System for Driver Drowsiness Detection with Deep Learning and Large Language Models Shivanand Kommagalla (Chaitanya Bharathi Institute of Technology, India); Madhuri Thimmapuram (JNTUA, India); Rithvik Voruganti (Chaitanya Bharathi Institute of Technology, India); Shaik Abraar (Chaitanya Bharathi Institute of Technology, India) [1571241950]	
4	ML-Based Quantification of Mental Fatigue Improvement Using Binaural Beat Stimulation Md Foysal Bhuiyan (American International University - Bangladesh, Bangladesh); Md. Jubairul Alam (American International University - Bangladesh, Bangladesh); Sumaia Farzana Nitu (American International University - Bangladesh, Bangladesh); Rubaiyat Islam (American International University -Bangladesh, Bangladesh); Kazi Tanvir (American International University - Bangladesh, Bangladesh); Kamruddin Nur (American International University- Bangladesh, Bangladesh) [1571250039]	
5	MentalBERT: A Comparative Study on Addressing Mental Health Issues Using Transformer-Based Language Model Piyal Saha (American International University-Bangladesh, Bangladesh); Tasmin Hassan (American International University - Bangladesh, Bangladesh);Md. Sajid Ahsan Seyam (American International University-Bangladesh, Bangladesh); Zishan Ahmed Onik (American International University -Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249369]	



Track 3


Session C-4: Software Engineering & Systems Intelligence

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chair

Ms. Swarnamouli Majumdar

Dr. Ali Hussain Zolait

No.	Title	Room 4
1	IDEception: Deceptive Behaviors in AI-Enhanced IDE Extensions Shilpa Choudhary (NGIT, Hyderabad, India); Mashetty Rishika (NGIT, India); Sarabudla Subhash Reddy (NGIT, India); Saibewar Amulya (NGIT, India); Mekala Saiteja (NGIT, India); Kommidi Sowmya Reddy (NGIT, India) [1571240942]	
2	Operationalizing LLM Safety in Requirements Engineering: Writing and Validating Testable Safety Requirements Monika Hossain (American International University - Bangladesh, Bangladesh); Nousheen Jahan (American International University-Bangladesh, Bangladesh); Robiul Islam (American International University - Bangladesh, Bangladesh); Rifat Al Mamun Rudro (American International University- Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249408]	
3	Architecture Quality Prediction Using QMOOD Metrics and Machine Learning Models: CatBoost vs TabNet Monika Hossain (American International University - Bangladesh, Bangladesh); Robiul Islam (American International University - Bangladesh, Bangladesh); Nousheen Jahan (American International University-Bangladesh, Bangladesh); Rifat Al Mamun Rudro (American International University- Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249415]	
4	Cross-Project Bug Severity Prediction Using TF-IDF and Classical Machine Learning Models Monika Hossain (American International University - Bangladesh, Bangladesh); Nousheen Jahan (American International University-Bangladesh, Bangladesh); Umma Habiba Hashi (American International University-Bangladesh, Bangladesh); Rifat Al Mamun Rudro (American International University-Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249383]	
5	Diversity-Stacked Ensemble (DSE): A Heterogeneous Meta-Ensemble Framework for Imbalanced Software Defect Prediction Tanvir Mhamud Sarker (American International University - Bangladesh, Bangladesh); Tasmia Nabila (American International University - Bangladesh, Bangladesh); Sazin Israk Prioty (American International University-Bangladesh, Bangladesh); Rifat Al Mamun Rudro (American International University- Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249433]	



Track 3

Session C-5: Edge AI & Distributed Systems

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Sayed Ali Abbas Al-Mosawi

Dr. Fadhel Basri

No.	Title	Room 5
1	<p>Edge-AI Implementation on UAVs for Low-Latency Radioactive Source Identification in Unstructured Environments</p> <p>Ziyaulhaq Zakariyya Muhammad (Ahmadu Bello University, Nigeria); Musah Alhassan (King Fahad University of Petroleum and Minerals, Saudi Arabia);Abduljalal Yusha'u Kassim (Ahmadu Bello University, Nigeria) [1571241910]</p>	
2	<p>A Lightweight Log Anomaly Detection System for Containerized Applications on Resource-Constrained Edge Devices</p> <p>Dwiky Dimas Prihartomo (Republic of Indonesia Defense University, Indonesia) 1571250596]</p>	
3	<p>Federated Semantic Communication for 6G: Efficient, Private, and Robust Diffusion-Based Reconstruction</p> <p>Saeed Hamood Alsamhi (University of Galway, Ireland); Amnnah Alhabeeb Shoushan (Sabratha University, Libya); Amr A. Alammari (AMU, India); Halah Aldumaini (IBB University, Yemen); Farhan Nashwan (Ibb University, Yemen) [1571244796]</p>	
4	<p>Federated Learning for Sustainable and Collaborative Waste Classification: A Vision Transformer-Based Approach</p> <p>Arzu Sevinç (Adiyaman University & Firat University, Turkey); Fatih Özyurt (Firat University, Turkey) [1571242155]</p>	




Track 6

Session C-6: Deep Learning for Traffic, Pothole & Damage Detection

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chair

Prof. Mustafa Aytekin

No.	Title	Room 6
1	Novel Deep Learning Model for the Detection of Traffic Incidents using CNN-LSTM Rawan Alqasimi (Polytechnic, Bahrain); Mamoon Rashid (Bahrain Polytechnic, Bahrain) [1571237036]	
2	Development of an AI-Based Vehicle Recognition System Using Roadside Video Streams Nidal Abdulrahim Dahman (University of Bahrain, Bahrain); Sumaiah Ali Al Solaiman (University of Bahrain, Bahrain); Muhammad Mazin Al Maathidi (University of Bahrain, Bahrain) [1571245990]	
3	Deep Learning-Based Pothole Classification Using Video Data for Roadway Maintenance Ahmed Suliman B Ali (Universiti Teknologi MARA, Malaysia); Naeem Aziz Memon (Universiti Teknologi MARA, Malaysia); Allam Musbah Al Allam (Libyan Centre for Engineering Research, Libya); Munder Bilema (Universiti Sains Malaysia, Malaysia); Shaban Ismael Albrka Ali (A'Sharqiyah University, Oman); Mahmoud Jahjough (University of Bahrain, Bahrain) [1571248599]	
4	Automated Pavement Distresses Detection Using Image Processing and Deep Learning Meshal Almoshaogeh (Qassim University, Saudi Arabia); Sadaquat Ali (Qassim University, Saudi Arabia); Arshad Jamal (Qassim University, Saudi Arabia); Fawaz Alharbi (Qassim University, Saudi Arabia); Muhammad Junaid (Qassim University, Saudi Arabia); Md Niamot Alahi (Qassim University, Saudi Arabia) [1571252312]	
5	Performance based assessment and life cost analysis for urban pavement maintenance decision-making Ayah Sharaf (Kuwait University, Kuwait); Haya Almutairi (KISR, Kuwait) [1571242439]	




Track 3

Session C-7: Advanced Image Processing & Segmentation

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Nidal Dahman
Khadija Almohsen

No.	Title	Room 7
1	Hyperspectral Spectral-Spatial Attention Network (HSSAN): A Novel Deep Learning Approach for Hyperspectral Image Classification Puttaswamy M R (Middle East College, Oman); Muhammad Nauman Bashir (Middle East College Muscat Oman, Oman) [1571240577]	
2	Comparative Analysis of Self-Supervised Learning Methods for Skin Lesion Segmentation Ayse Coban Piskin (Adiyaman University, Turkey); Fatih Özyurt (Firat University, Turkey) [1571247562]	
3	HyenaMed: Lightweight Skin Lesion Segmentation via Convolutional Global Context Modeling Zeeshan Haider (Southwest Jiaotong University, China); Haiyu Huang (Southwest Jiaotong University, China); Muhammad Adnan Farooq Butt (Southwest Jiaotong University, China); Muqadar Ali (Southwest Jiaotong University & Nanjing University of Science and Technology, China) [1571253843]	
4	Comparative Performance Analysis of Various Generative Adversarial Network (GANs) for Rice Disease Dataset Bireswar Dass Mazumdar (Bennett University, India); Prashant K Gupta (Bennett University, India); Shallu Sharma (Panjab University, India); Gurlal Singh (Bennett University, India) [1571242310]	



Track 3


Session C-8: Privacy, Blockchain & Secure Systems

Session time Wed, Apr 22 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Ali Hussain Zolait

Dr. Sahar Abdelrahman

No.	Title	Room 8
1	Adaptive Homomorphic Encryption-Based Tensor Factorization for Edge-Enabled Privacy-Preserving Systems Chitranjana Kosre (National Institute of Technology Raipur, India); K Jairam Naik (National Institute of Technology Raipur, India) [1571233793]	
2	Federated Edge Intelligence for Privacy-Preserving IoT-Based Smart Banking Systems: Architectures, Security, and Experimental Challenges Aawag Mohsen Alawag (Universiti Teknologi Petronas (UTP) & UTP, Malaysia); Ali H Zolait (University of Bahrain, Bahrain); Halimah Alkhorasani (Taiz University, Yemen) [1571240606]	
3	Scalable Distributed Query Processing Using Smart Contracts Shahad Al Tamimi (Princess Sumaya University for Technology, Jordan); Qasem Abu Al-Haija (Jordan University of Science and Technology, Jordan) [1571234393]	
4	Federated Learning for Cross-Institution Fraud Detection in Cloud Anokh Kishore (Capital ONE, USA); Ronak Sanghavi (Senior Architect, USA); Ashish Kumar (Amazon Web Services & University of Notre Dame, USA); Jannatul Ferdousi (San Francisco Bay University, USA) [1571248210]	



Parallel Sessions Details

Parallel Session A

11:00–12:30

Track 1

Session A-1: Process Systems, Modeling & Industrial Applications

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Mohamed Bin Shams

Dr. S M Zakir Hossain

No.	Title	Room 1
1	<p>Integrating CFD-Based Projects into Vocational Education: A Learning Design for Non-Premixed Combustion Analysis Yanuar Agung Fadlullah (Yogyakarta State University, Indonesia); Wagiran Wagiran (Universitas Negeri Yogyakarta, Indonesia); Nur Rizqi Priyambodo (Universitas Gadjah Mada, Indonesia); Muhamad Riyan Maulana (Universitas Negeri Yogyakarta, Indonesia); Rizal Justian Setiawan (National Chung Hsing University & Yuan Ze University, Taiwan); Khakam Maruf (Gadjah Mada University, Indonesia) [1571235358]</p>	
2	<p>An Improved Recursive Least Square Algorithm for Online Parameter Identification of 2-RC Equivalent Circuit Model Usman Zubairu (Ahmadu Bello University, Nigeria); Umar Musa (Ahmadu Bello University-Zaria, Nigeria); Md Mahmudul Hasan (Binghamton University, USA); Ibrahim Abdullahi Shehu (Ahmadu Bello University, Nigeria); Aminu Jibrin Aliyu (Universiti Teknologi Petronas, Malaysia & Ahmadu Bello University, Nigeria); Ramani Kannan (Universiti Teknologi Petronas, Malaysia) [1571237329]</p>	
3	<p>Bibliometric Mapping Using VOSviewer and Kinetic Modeling for Sustainable Bacterial Pigment Production Salem Sami Salem (University of Bahrain, Bahrain); Shahad Meshal AlHadi (University of Bahrain, Bahrain); Shaha Khaled Ahmed (University of Bahrain, Bahrain); S. M. Zakir Hossain (University of Bahrain, Bahrain); Maysoun Awadh (University of Bahrain, Bahrain); Shaikh Razzak (King Fahd University of Petroleum and Minerals, Saudi Arabia) [1571243887]</p>	
4	<p>Dynamic Simulation and Theoretical Investigation of Integrated Shell and Double Pipe Heat Exchanger Ajaz Rashid (University of Bahrain, Bahrain); Husain Yusuf Hani (University of Bahrain, Bahrain); Salman Yusuf Hammad (University of Bahrain, Bahrain) [1571247633]</p>	
5	<p>Bayesian-Optimized Multi-Input Single-Output (MISO) Modeling for Microalgal Wastewater Treatment Abdulla Ebrahim Janahi (University of Bahrain, Bahrain) [1571249748]</p>	
6	<p>Energy Optimization and Decarbonization Strategies in Hard-to-Abate Industries: A Review Alaa Jameel Isa Alsaffar (University of Bahrain, Bahrain); Mohamed Bin Shams (University of Bahrain, Bahrain); Muhammad Rizwan (University of Bahrain, Bahrain) [1571275597]</p>	



Track 2

Session A-2: Sustainable Practices in Industry

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Abdul Waheed Badar

Dr. Hussain Imran

No.	Title	Room 2
1	<p>Development of Environmentally Friendly Electronic Pump Technology for Oil Spill Prevention in Traditional Fishing Vessel Maintenance</p> <p>Rizal Justian Setiawan (National Chung Hsing University & Yuan Ze University, Taiwan); Khakam Maruf (Gadjah Mada University, Indonesia) [1571228789]</p>	
2	<p>Life Cycle Assessment of a DC Powered Cold Box for Modern Supply Chain Solutions</p> <p>Afnan Ahmed Gilani (NUST, Pakistan); Shahid Ikramullah Butt (National University of Science and Technology (NUST), Pakistan); Ghulam Hussain (University of Bahrain, Bahrain); Syed Husain Imran Jaffery (Birmingham City University, United Kingdom (Great Britain)); Adeel Waqas (NUST, Pakistan); Mushtaq Khan (Prince Mohammad Bin Fahd University, Saudi Arabia) [1571242072]</p>	
3	<p>Sustainable Wire Arc Additive Manufacturing (WAAM) of AISI 316L Stainless Steel: Analysis of Dilution and Hardness Variation</p> <p>Khalid Abulrahman Al Sayed (Prince Mohammad Bin Fahd University, Saudi Arabia); Abduljabbar Khamees Hamdeen (Prince Mohammad Bin Fahd University, Saudi Arabia); Mohammed Mesfer Alqahtani (Prince Mohammad Bin Fahd University, Saudi Arabia); Faramarz Djavanroodi (Prince Mohammad Bin Fahd University, Saudi Arabia); Mushtaq Khan (Prince Mohammad Bin Fahd University, Saudi Arabia) [1571242474]</p>	



Track 3

Session A-3: Optical, RF & Antenna Systems

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

Session Chair

Dr. Luisella Balbis

No.	Title	Room 3
1	<p>Optimization of WDM Systems Using Apodized Fiber Bragg Gratings: A Performance Analysis</p> <p>Antony Judice A (University of Technology and Applied Sciences, Oman & Chitkara University, India); Aaron James S (University of Technology and Applied Sciences, Oman); Rajesh Yadav (Vivekananda Institute of Professional Studies, India); Samayaraj Murali Kishanlal (University of Technology and Applied Sciences, Oman); Subha Bharathi Bharathi (University of Technology and Applied Sciences, Oman); Joel Livin (University of Technology and Applied Sciences, Oman)</p> <p>[1571238716]</p>	
2	<p>Safety Novel Design Based MIMO Antenna for Wireless Capsule Endoscopy</p> <p>Hadi Jameel Hadi (Universiti Sains Malaysia, Malaysia); Widad Ismail (Engineering Campus, Universiti Sains Malaysia, Malaysia); Amer T. Abed (Madenet ALelem University, Iraq); Mariatti Jaafar Mustapha (Universiti Sains Malaysia, Malaysia)</p> <p>[1571238583]</p>	
3	<p>Implementation of a Traditional QO-100 Ground Station at NPIC Using Hardware Transverters</p> <p>Bunnaren Chrin (NPIC, Cambodia); Seven Siren (NPIC, Cambodia); Mikio Mori (Kyoto University, Japan); Channara Chhet (National Polytechnic Institute of Cambodia (NPIC), Cambodia); Povry Rin (NPIC, Cambodia); Sok Oeun Un (NPIC, Cambodia); Channareth Srun (National Polytechnic Institute of Cambodia, Cambodia); Chivon Choeung (National Polytechnic Institute of Cambodia, Cambodia); Taravaddey Chhim (National Polytechnic Institute of Cambodia, Cambodia)</p> <p>[1571241844]</p>	
4	<p>Two-Stage Calibration Method for Precise Timing Converters</p> <p>Amna Mohammed Abdulla (UoB, Bahrain); Mohammed Majid M Al Khalidy (University of Bahrain & Engineering College, Bahrain); Mehmet Özgür Sahin (CEA Irfu & Université Paris-Saclay, France)</p> <p>[1571242283]</p>	
5	<p>Design System of Fish Caller Equipment based on Electromagnetic Wave and Light Emitting Diode</p> <p>Rizal Justian Setiawan (National Chung Hsing University & Yuan Ze University, Taiwan); Khakam Maruf (Gadjah Mada University, Indonesia); Apri Aditya Saputra (Gadjah Mada University & Yogyakarta State University, Indonesia); Nur Azizah (National Cheng Kung University & China Medical University, Taiwan); Nur Evirida Khosyati (Yogyakarta State University, Indonesia); Darmono (Yogyakarta State University, Indonesia)</p> <p>[1571224790]</p>	



Track 4


Session A-4: Power Electronics & Control Systems

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Noureddine Mansour

Dr. Maamar Taleb

No.	Title	Room 4
1	<p>Design and Analysis of a 250 W Multiplier SEPIC Converter with PI Feedback Control</p> <p>Mohd Nadzri Mamat (Universiti Sains Malaysia, Malaysia); Suardi Kaharuddin (Universiti Sains Malaysia, Malaysia); Mohamad Nazir Abdullah (School of Electrical and Electronic Engineering, Universiti Sains Malaysia, Malaysia); Noramalina Abdullah (USM, Malaysia) [1571235983]</p>	
2	<p>Particle Swarm Optimization-Based MPPT tracking with Voltage-Oriented Control for Grid-Connected PV Systems under Partial Shading Conditions</p> <p>Maamar Taleb (UOB, Bahrain); Khaled Zehar (University of Bahrain, Bahrain); Abdulla Mohsen (University of Bahrain, Bahrain) [1571251135]</p>	
3	<p>Development and Performance Evaluation of an Automatic ON and OFF Switch for Street Light System Using Analog Components</p> <p>Abigail A Pado (Bicol State College of Applied Sciences and Technology, Philippines); Jannah Mae L Intia (Bicol State College of Applied Sciences and Technology, Philippines); Darlyn May B Sarol (Bicol State College of Applied Sciences and Technology, Philippines); John Joshua F. Montañez (Bicol State College of Applied Sciences and Technology, Philippines); Donna T. San Antonio (Bicol State College of Applied Sciences and Technology, Philippines); Roy Dialogo Tipones (Bicol State College of Applied Sciences and Technology & Mapua University, Philippines) [1571239298]</p>	
4	<p>Energy Harvesting from Low-Amplitude Vibrations in Household Appliances</p> <p>Suhardi Azliy Junoh (Universiti Sains Malaysia, Malaysia); Harith Husainy Abdul Halim (Universiti Sains Malaysia, Malaysia); Zuraini Dahari (Universiti Sains Malaysia, Malaysia) [1571241835]</p>	
5	<p>Comparative Analysis of Energy Output in Solar Tracking Systems Zoren P Mabunga (Southern Luzon State University, Philippines); Ken Erick Glorioso (Southern Luzon State University, Philippines); Nathaniel Miranda (Southern Luzon State University, Philippines); James Russel A. Rondilla (Southern Luzon State University, Philippines); Maurine C. Panergo (Southern Luzon State University, Philippines); Renato R. Maaliw (Southern Luzon State University, Philippines)</p> <p>[1571239552]</p>	



Track 5

Session A-5: Towards Intelligent and Sustainable Built Environments: AI, Design Innovation, and Performance-Based Solutions

Session Chairs

Dr. Reem Sultan

Dr. Dalia Shams

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

No.	Title	Room 5
1	<p>AI-Driven Digital Transformation for Sustainable Architecture and Engineering Using Integrated Smart Systems Mohammed Aseeri (KACST, Saudi Arabia); Amro M AlFayi (AlMaarefa University, Saudi Arabia); Ahmed A Alabdullah (KACST, Saudi Arabia); Abdulaziz A Alahmri (AFT Company, Saudi Arabia) [1571247746]</p>	
2	<p>Interactive Architecture as a Catalyst for Smart Urbanism Mrunal Devidas Gaikwad (National Institute of Technology Patna, India); Nazish Abid (University of Bahrain, Bahrain); Shubham Jaiswal (Hiroshima University, Japan); Mazharul Haque (National Institute of Technology Patna, India); Manoj Kumar (National Institute of Technology Patna, India) [1571251018]</p>	
3	<p>Integrating Generative AI in Early Design Stages for Architectural and Interior Design Projects Maryam Obaid (University of Bahrain, Bahrain); Osama Omar (University of Bahrain, Bahrain) [1571251104]</p>	
4	<p>Importance of Acoustic Performance in Mosques Haneen Buhejji (Applied Science University, Bahrain) [1571251124]</p>	



Track 6

Session A-6: Autonomous & Electric Vehicles, Driving Behavior, and Emissions

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Hassan Al Jaidah

Dr. Rashed Abdulrahman Ismaeel

No.	Title	Room 6
1	<p>Energy and Emission Implications of Electric and Autonomous Vehicle Deployment in Saudi Arabia's Urban Transport Systems</p> <p>Md Kamrul Islam (King Faisal University, Saudi Arabia); Mahbub Hassan (Chulalongkorn University, Thailand); Mostafa Sameer (Florida International University Miami, FL, USA); U Gazder (UoB, Bahrain) [1571242406]</p>	
2	<p>Multi-Criteria Performance Evaluation of Autonomous Vehicle Driving Behaviors at Urban Intersections Using TOPSIS and VIKOR</p> <p>Mustafa Albdairei (AL-Qalam University College, Iraq); Ali Almusawi (Çankaya University, Turkey) [1571246593]</p>	
3	<p>Learning Emissions Signatures: A Machine Learning Approach to Vehicle CO₂ Classification</p> <p>Aws Ahmad Kaffini (King Fahad University of Petroleum and Minerals, Saudi Arabia); Duha Alsarayreh (King Fahd University of Petroleum and Minerals, Saudi Arabia); Syed Masiur Rahman (King Fahd University of Petroleum and Minerals, Saudi Arabia) [1571250374]</p>	
4	<p>Microscopic Simulation Assessment of Signalized Intersection Under Combined Traffic-Geometric Scenarios: A Case Study of Buraidah City</p> <p>Arshad Jamal (Qassim University, Saudi Arabia); Sadaquat Ali (Qassim University, Saudi Arabia); Meshal Almoshaogeh (Qassim University, Saudi Arabia); Fawaz Alharbi (Qassim University, Saudi Arabia); Muhammad Junaid (Qassim University, Saudi Arabia); Malik Parras Hussan Abbas (Qassim University, Saudi Arabia) [1571252270]</p>	
5	<p>Optimizing Traffic Efficiency and Emissions Using SIDRA: A Case Study of Buraydah Urban Network</p> <p>Meshal Almoshaogeh (Qassim University, Saudi Arabia); Muhammad Junaid (Qassim University, Saudi Arabia); Arshad Jamal (Qassim University, Saudi Arabia); Fawaz Alharbi (Qassim University, Saudi Arabia); Sadaquat Ali (Qassim University, Saudi Arabia); Md Niamot Alahi (Qassim University, Saudi Arabia) [1571252396]</p>	



Track 3

Session A-7: Explainable AI & Ethical AI

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. A. Hamid Irhouma

Prof. Khaled Zehar

No.	Title	Room 7
1	<p>Ethical Machine Learning in Credit Scoring: An Empirical Analysis of Fairness, Transparency, Accountability, and Sustainability</p> <p>Md. Abdul Malek Sobuj (American International University - Bangladesh, Bangladesh); Sadia Akter (University of Dhaka, Bangladesh); Pronoy Kanti Bhowmick (American International University-Bangladesh, Bangladesh); Md. Faruk Abdullah Al Sohan (University of Malaya, Malaysia); Afroza Nahar(American International University-Bangladesh, Bangladesh) [1571250742]</p>	
2	<p>A Comparative Analysis of Android Permission Patterns for Effective Malware Classification with Explainable AI</p> <p>Md. Ismiel Hossen Abir (International Standard University, Bangladesh); Md Sajidul Mowla (Chittagong University of Engineering and Technology, Bangladesh); Umama Jannat (Chittagong University of Engineering & Technology, Bangladesh); Ali H Zolait (University of Bahrain, Bahrain); AKM Bahalul Haque (Abo Akademi University, Finland) [1571238460]</p>	
3	<p>Non-neutrality in Machine Learning Models for Detection of Parkinson's Disease</p> <p>Kiran Pandey (Technocrats Institute of Technology, India); Bireswar Dass Mazumdar (Bennett University, India); Sejal Tiwari (Technocrats Institute of Technology, India); Anurag Choubey (Technocrats Institute of Technology, India); Nazish Abid (University of Bahrain, Bahrain); Shah Nawaz Khan (Bahrain Polytechnic, Bahrain) [1571253877]</p>	



Track 3


Session A-8: Reviews & Survey Papers

Session time Thu, Apr 23 11:00-12:30 Asia/Bahrain

Session Chairs

Dr. Fadhel Basri

Dr. Sayed Ali Abbas Al-Mosawi

No.	Title	Room 8
1	Automated Chart Summarization: A Systematic Literature Review Khadija Ateya Almohsen (University of Bahrain & American University of Bahrain, Bahrain); Nabil Hewahi (UOB, Bahrain); Wael M El-Medany (University of Bahrain, Bahrain) [1571233563]	
2	Recent Wireless Sensor Networks Localization with Machine Learning Related Trends: A Focused Review of Algorithmic and Practical Advances Nasreddine Karour (University of Ahmed Draia Adrar, Algeria); Mohammed Omari (American University of Ras Al Khaimah, United Arab Emirates); Mohammed Kaddi (Ahmed Draia University Algeria, Algeria) [1571252576]	
3	Modern Trends in Content-Based Image Retrieval: A Comparative Review Haibaoui Mohammed (Adrar University, Algeria); Mohammed Omari (American University of Ras Al Khaimah, United Arab Emirates); Mohammed Kaddi (Ahmed Draia University Algeria, Algeria) [1571252862]	
4	An Overview of Simulated Annealing Applications for Energy Efficiency Optimization in Wireless Sensor Networks Abdelhamid Benchikh (Adrar University, Algeria); Mohammed Kaddi (Ahmed Draia University Algeria, Algeria); Mohammed Omari (American University of Ras Al Khaimah, United Arab Emirates) [1571253698]	
5	A Comparative Study on Forecasting Air Pollution in India Using Machine Learning Fuad Ahmad Musleh (University of Bahrain, Bahrain); Ranyah Ghaleb Taha (Al Iman School, Bahrain) [1571238608]	



Parallel Session B

1:00–2:30

Track 6

Session B-1: Sustainable Mobility, Smart Infrastructure & Digital Twins

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chair

Dr. Mahmoud Jahjouh

No.	Title	Room 1
1	<p>The Role of Smart Mobility Toward BRT to Support an Inclusive and Sustainable Transportation System: Current Tendency and Future Agenda</p> <p>Ummu Afifah (Universitas Telkom, Indonesia); Fauzan Romadlon (Telkom University, Indonesia & Universiti Tun Hussein Onn Malaysia, Malaysia); DodiZulherman (Telkom University, Indonesia); Joewono Prasetijo (Universiti Tun Hussein Onn Malaysia, Malaysia) [1571241069]</p>	
2	<p>Prediction of Pavement Condition Rating (PCR) Using Interpretable Machine Learning Framework: Evidence From Saudi Arabia</p> <p>Malik Parras Hussan Abbas (Qassim University, Saudi Arabia); Fawaz Alharbi (Qassim University, Saudi Arabia); Arshad Jamal (Qassim University, Saudi Arabia); Meshal Almoshaogeh (Qassim University, Saudi Arabia); Sadaquat Ali (Qassim University, Saudi Arabia); Hassan Mousaid Al-Ahmadi (King FahdUniversity of Petroleum and Minerals (KFUPM), Saudi Arabia) [1571253929]</p>	
3	<p>Digital Twins and Artificial Intelligence for Sustainable Infrastructure Management: A Future Perspective</p> <p>Waqas Arshad Tanoli (King Faisal University, Saudi Arabia); Hilal Khan (NUST Institute of Civil Engineering, Pakistan); Umaira Shahid (Brains Institute, Pakistan); Qaisar Mahmood (University of Bahrain, Bahrain) [1571237518]</p>	
4	<p>Study of the Effect of Undertray Geometry Variations in Formula Student Cars on Downforce and Drag Coefficient using Computational Fluid Dynamics Method</p> <p>Yanuar Agung Fadlullah (Yogyakarta State University, Indonesia); Nur Rizqi Priyambodo (Universitas Gadjah Mada, Indonesia); Muhammad Yusri Dzal Yahya (Institut Teknologi Sepuluh Noverber, Indonesia); Muhamad Riyan Maulana (Universitas Negeri Yogyakarta, Indonesia); Rizal Justian Setiawan (National Chung Hsing University, Taiwan); Syahrial Shaddiq (Universitas Lambung Mangkurat, Indonesia); Khakam Ma'ruf (Universitas Gadjah Mada, Indonesia) [1571235381]</p>	
5	<p>Smartphone Distractions and Pedestrians' Perception of E-Scooters in Shared Spaces Using Virtual Reality</p> <p>Alamein M. H. Algabo (King Fahd University of Petroleum and Minerals, Saudi Arabia); Muhammad Abdullah (King Fahd University of Petroleum and Minerals, Saudi Arabia); Muhammad Aamir Basheer (Interdisciplinary Research Center for Smart Mobility and Logistics, Saudi Arabia); Syed Masiur Rahman (King Fahd University of Petroleum and Minerals, Saudi Arabia) [1571242544]</p>	



Track 2

Session B-2: Engineering Management

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Venu Parameswaranpillai

Dr. Babar Ashfaq

No.	Title	Room 2
1	<p>Strategic Leadership for Human-Centric AI Adoption in Automotive Manufacturing Organisations Jaspreet Singh (Symbiosis Institute of Business Management, Pune & Symbiosis International (Deemed) University, Pune, India); Vaishnavi Rathod (Symbiosis Institute of Business Management, Pune & Symbiosis International (Deemed) University Pune, India); Deepika Pandita (Symbiosis Institute of Business Management, Pune & Symbiosis International (Deemed) University, Pune, India) [1571249225]</p>	
2	<p>Optimal Clustering with Deep Reinforcement Learning for Supply Chain Management Saurabh Goel (Accenture Llp, USA); Ashok Kumar (Walmart, USA); Yasir Mohammad Alvi (University of Chicago, USA) [1571240775]</p>	
3	<p>Engineering Framework for ESG Environmental and Governance Strategies Through Industry 5.0: A Systematic Review Muhammad Lutfan Setyawan (Institut Teknologi Sepuluh Nopember (ITS), Indonesia); Sri Fatmawati (Institut Teknologi Sepuluh Nopember (ITS), Indonesia); Heri Kuswanto (Institut Teknologi Sepuluh Nopember, Indonesia) [1571233376]</p>	
4	<p>Human Resource Management as a Risk Buffer in EPC Oil & Gas Projects Nova Aryani (Universitas Mercu Buana, Indonesia); Mawardi Amin (Universitas Mercu Buana, Indonesia) [1571245185]</p>	
5	<p>Optimizing the Composition of AA6063 Aluminum Alloy Through RSM Design and Desirability Function Approach Ahmed Saleh (University of Bahrain, Bahrain); Osama Al-Jamal (University of Bahrain, Bahrain); Ghulam Hussain (University of Bahrain, Bahrain) [1571242485]</p>	



Track 3

Session B-3: Robotics, UAVs & Autonomous Systems

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chair

Dr. Mohamed fnaiech

No.	Title	Room 3
1	Quantum-Enhanced Multi-Sensor Fusion for UAV Navigation in GPS-Denied Environments Ahlam Moussa (Al Akhawayn University, Morocco); Ilham Nait Him (Al Akhawayn University, Morocco, Morocco); Kacem Chawqi (Al Akhawayn University, Morocco, Morocco); Yassine Salih-Alj (Al Akhawayn University, Morocco) [1571229861]	
2	Robust Formation Maintenance of Swarm UAV Followers Using Super-Twisting Control: A Comparative Study with PID Mohammed Ali Alfayizi (Qassim University, Saudi Arabia) [1571241719]	
3	Can Drones Think? Toward Cognitive Autonomy in Search and Rescue Swarnamouli Majumdar (Concordia University, Quebec, Canada); Anjali Awasthi (Concordia University, Canada); Ali H Zolait (University of Bahrain, Bahrain) [1571259614]	
4	Assessing Construction Robotic Applications Using an Expert-Based Delphi Approach Fibah Jan (King Fahad University of Petroleum and Minerals, Saudi Arabia); Laith Awni Al-Hadidi (KFUPM, Saudi Arabia); Muhammad Saiful Islam (Shahjalal University of Science and Technology, Bangladesh) [1571242199]	



Track 4

Session B-4: AI, Optimization & Smart Engineering Applications

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Ajaz Rashid

Dr. Muhammad Rizwan

No.	Title	Room 4
1	Rooftop Photovoltaic Shading Analysis Using GIS and Machine Learning in Dubai Zahra Radhi A. Salman (University of Bahrain, Bahrain); Minwir Al-Shammari (University of Bahrain, Sakhir, Bahrain) [1571248027]	
2	Implementing Smart Automation in EV Battery Pack Manufacturing: A Workforce System Transition Approach Vaishnavi Rathod (Symbiosis Institute of Business Management, Pune & Symbiosis International (Deemed) University Pune, India); Jaspreet Singh (Symbiosis Institute of Business Management, Pune & Symbiosis International (Deemed) University, Pune, India); Himani Choudhary (Symbiosis Institute of Business Management, Pune & Symbiosis International (Deemed) University, Pune, India); Deepika Pandita (Symbiosis Institute of Business Management, Pune & Symbiosis International (Deemed) University, Pune, India) [1571250177]	
3	The Role of Metaheuristics in Smart City Energy Efficiency: Challenges, Applications, and Future Trends Taha Bachir Ammour (Adrar University, Algeria); Mohammed Kaddi (Ahmed Draïa University Algeria, Algeria); Mohammed Omari (American University of Ras Al Khaimah, United Arab Emirates) [1571253208]	
4	Estimation of Energy Consumption for the GCC Countries Salwa Baserrah (University of Bahrain, Bahrain); Isa Salman Qamber (Former UoB, Member of BSE, Bahrain) [1571253982]	



Track 5


Session B-5: Smart and Sustainable Architecture: Integrating AI, Human-Centric Design, and Building Performance

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Nazish Abid

Sagarika Nayak

No.	Title	Room 5
1	The Case for Fitting Public Housing of The Disabled in The Kingdom of Bahrain with Smart Technology Mona Aldossary (Bahrain); Osama Omar (University of Bahrain, Bahrain) [1571252188]	
2	Engineering a 2.5D Urban Twin: Semantic GeoAI Discovery and Blockchain-Provenanced Updates Andrei Sebastian Nicula (Politehnic University of Timisoara, Romania) [1571252643]	
3	A Theoretical Framework for AI-Agentic Systems Integrated with Digital Twins: Autonomous Optimization of Healthcare project Mohammad Tahir (Project Management Team, Saudi Arabia); Adiba Shafique (University of Nottingham, United Kingdom (Great Britain)); Nazish Abid (University of Bahrain, Bahrain) [1571253898]	
4	AI-Enabled Digital Twin Framework for Climate-Responsive and Sustainable Building Design Mohd Firoz Anwar (Jamia Millia Islamia, India); Fatma Waseem (Jamia Millia Islamia, India); Mazharul Haque (National Institute of Technology Patna, India); Mohd Arqam Khan (Jamia Millia Islamia, India); Nazish Abid (University of Bahrain, Bahrain) [1571253940]	
5	AI-Assisted Decision-Making for Social Housing in the Gulf: Multi-Objective Optimization Framework Walaa Fathi Abdullah Sultan (University of Bahrain, Bahrain); Islam Hamdi El Ghonaimy (University of Bahrain & Consultant, Bahrain) [1571257960]	



Track 6

Session B-6: Road Safety, Accident Severity & Pedestrian Behavior

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chairs

Dr. Rashed Abdulrahman Ismaeel

Dr. Mahmoud Jahjouh

No.	Title	Room 6
1	<p>Explanatory Modeling of Accident Severity at Signalized Intersections: A Case Study of Manama, Bahrain</p> <p>Eman Algherbal (King Fahd University of Petroleum and Minerals, Bahrain); Hassan Mousaid Al-Ahmadi (King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia); Syed Masiur Rahman (King Fahd University of Petroleum and Minerals, Saudi Arabia); Muhammad Abdullah (King Fahd University of Petroleum and Minerals, Saudi Arabia) [1571242261]</p>	
2	<p>Explaining Road Crash Severity with Machine Learning: A Predictive and Interpretable Framework</p> <p>Ahmad Ismail Alrababah (King Fahad University of Petroleum and Minerals, Saudi Arabia); Aws Ahmad Kaffini (King Fahad University of Petroleum and Minerals, Saudi Arabia) [1571251298]</p>	
3	<p>Modeling Pedestrian Red Signal Violations at Signalized Intersections Using Machine Learning</p> <p>Tania Nidul Tria (King Fahd University of Petroleum and Minerals, Saudi Arabia); Muhammad Abdullah (King Fahd University of Petroleum and Minerals, Saudi Arabia); Syed Masiur Rahman (King Fahd University of Petroleum and Minerals, Saudi Arabia); Hassan Mousaid Al-Ahmadi (King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia) [1571248490]</p>	
4	<p>Geospatial Analysis for Optimizing Emergency Ambulance Response to Road Accidents in Bahrain</p> <p>Hawra Ahmed (University of Bahrain, Bahrain); Bayan Husain Swar (University of Bahrain, Bahrain); Rashed Ismaeel (University of Bahrain, Bahrain) [1571250210]</p>	
5	<p>Spatial Prediction of Fatal Road Accidents Using GIS and Machine Learning: Bahrain Case Study</p> <p>Reem Abdul Rahman (British University of Bahrain, Bahrain); Abdallah Accary (British University of Bahrain, Bahrain); Khalil Al-Joburi (British University of Bahrain, Bahrain) [1571251300]</p>	



Track 3

Session B-7: Smart Cities & Intelligent Systems

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chairs

Prof. Ebrahim A. Mattar

Bashayer Husain Saleh

No.	Title	Room 7
1	<p>AI, Smart Mobility and Transport Equity: Comparative Insights from Global Cities for India</p> <p>Anubha (National Institute of Technology, Patna, India); Mazharul Haque (National Institute of Technology Patna, India); Nazish Abid (University of Bahrain, Bahrain); Saima Raza (National Institute of Technology Patna, India); Somi Sareen (National Institute of Technology Patna, India) [1571250726]</p>	
2	<p>Can Smart Cities Trust Autonomous Policing? Governing AI for Urban Public Safety</p> <p>Swarnamouli Majumdar (Concordia University, Quebec, Canada); Ali H Zolait (University of Bahrain, Bahrain); Anjali Awasthi (Concordia University, Canada) [1571255198]</p>	
3	<p>A Dynamic Diffusion Graph-Based Framework for Urban Traffic Congestion Prediction</p> <p>Towhidul Islam (American International University - Bangladesh, Bangladesh); Emrul Hassan (American International University-Bangladesh, Bangladesh); Zihadul Islam (American International University - Bangladesh, Bangladesh); Kazi Tanvir (American International University - Bangladesh, Bangladesh); Kamruddin Nur (American International University-Bangladesh, Bangladesh) [1571249347]</p>	
4	<p>MCP-Enhanced Blockchain Architecture for Agricultural Data Sharing: A Hybrid Caching Approach for Supply Chain Traceability</p> <p>Nur Arifin Akbar (Universita Degli Studi di Palermo, Italy); Rahool Demhani (SingularLogic, Greece & University of Messina, Italy); Camillo Gioè (ELMI Software, Italy); Biagio Lenzitti (University of Palermo, Italy); Vito Puleio (ELMI Software, Italy); Clare Sullivan (Agricultural University of Athens, Greece); Domenico Tegolo (University of Palermo - DMI, Italy) [1571241235]</p>	



Track 3

Session B-8: Emerging AI & Future Technologies

Session time Thu, Apr 23 13:00-14:30 Asia/Bahrain

Session Chairs

Ayesha Agha Shah

Dr. Nuha Jamal Alzayani

No.	Title	Room 8
1	<p>BitRL: Reinforcement Learning with 1-bit Quantized Language Models for Resource-Constrained Edge Deployment</p> <p>Md Ashiq Ul Islam Sajid (BRACUniversity, Bangladesh); Mohammad Sakib Mahmood (Missouri State University, USA); Md. Tareq Hasan (PrimeUniversity, Bangladesh); Md Abdur Rahim (Prime University, Bangladesh); Rafat Ara (German University Bangladesh, Bangladesh); Md. Arafat Hossain Jahangirnagar University, Bangladesh) [1571245649]</p>	
2	<p>VoiceGuard: Adversarial Social Engineering Training using Large Language Model</p> <p>Khalid Badar Alamri (Sultan Qaboos University, Oman); Mohammed Ahmed Al-Busaidi (Sultan Qaboos University, Oman); Usama Mohammed Al- Nabhani (Sultan Qaboos University, Oman); Waseem Iqbal (SQU, Oman); Waqas Aman (Sultan Qaboos University, Oman) [1571240981]</p>	
3	<p>Reducing Post-Quantum Cryptography Overhead in IoT Networks Using an Epoch-Based Compression Approach</p> <p>Abdessamad Jaouad (ENSAM Casablanca, Morocco); Ibrahim Guelzim (Hassan 2 University of Casablanca & National High School of Arts and Crafts, Morocco) [1571251314]</p>	
4	<p>Technical Gap Analysis and Policy Evaluation of SSL TLS Security within the National Vital Information Infrastructure</p> <p>Chandra Yedija Kuntjoro (Republic of Indonesia Defense University, Indonesia); Teddy Mantoro (Nusa Putra University, Indonesia) [1571251178]</p>	



Parallel Session C

2:30–4:00

Track 3


Session C-1: Wireless, Communication & Networking

Session time Thu, Apr 23 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Alaaeddine Ramadan

Dr. Zuhair Bahri

No.	Title	Room 1
1	Measurement-Based Spectrum Utilization Analysis of the 400-900MHz Band in the Philippines Annie Liza C. Pintor (De La Salle University Manila, Philippines); Gerald P Arada (De La Salle University, Philippines) [1571238420]	
2	Performance Analysis of UAV-Assisted FSO Relaying over Fading Channels Muhammad Nauman Bashir (Middle East College Muscat Oman, Oman) [1571239199]	
3	RESPOND: Reliable, Efficient, and Secure Emergency Networks Enabled by Load-Balanced Communication Paths Lefteris Tsipi (University of the Aegean, Greece); Grigorios Papaioannou (University of the Aegean, Greece); Maria-Garyfallo Volakaki (University of the Aegean, Greece); Sofia Anagnostou (University of the Aegean, Greece); Fotios Katsifas (University of the Aegean, Greece); Emmanouel T. Michailidis (University of West Attica, Greece); Konstantinos Maliatsos (University of Aegean & University of Piraeus, Greece); Demosthenes Vouyioukas (University of Piraeus, Greece) [1571241157]	



Track 2

Session C-2: Emerging Technologies

Session time Thu, Apr 23 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Said Ghani Khan

Dr. Raguraman Kannan

No.	Title	Room 2
1	<p>Wire Arc Additive Manufacturing (WAAM) of Thin- Walled SS-316L Structures: from Review to a New Experimental Methodology</p> <p>Khalid Abulrahman Al Sayed (Prince Mohammad Bin Fahd University, Saudi Arabia); Faramarz Djavanroodi (Prince Mohammad Bin fahd University, Saudi Arabia); Mushtaq Khan (Prince Mohammad Bin Fahd University, Saudi Arabia) [1571253005]</p>	
2	<p>Scan Strategy Optimisation for Improved Tribological Performance of SLM Fabricated SS316L</p> <p>Hemanth Kandala (VEMU Institute of Technology, India); Harinadh Vemanaboina (VEMU Institute of Technology, India); J Syam Sundhara (VEMU Institute of Technology, India); Santosh Kasula (Sreyas Institute of Engineering and Technology, India); Ananda Mohan Vemula (Guru Nanak Institutions Technical Campus, India); Veera Raghavulu K (Marri Laxman Reddy Institute of Technology & Management, India) [1571253169]</p>	
3	<p>Solar Water Heating and Storage through Flat Plate Solar Collectors under Tropical Conditions: A Parametric Study</p> <p>Naseem Uddin (Universiti Teknologi Brunei, Brunei Darussalam); Veron Chew Shiang Lung (Universiti Teknologi Brunei, Brunei Darussalam); Chong Yii Kee (Universiti Teknologi Brunei, Brunei Darussalam); Omar Al-Abbasi (University of Bahrain, Bahrain); Muhammad Abid (University of Brunei Darussalam, Brunei Darussalam) [1571242052]</p>	
4	<p>Multi-Modal Artificial Intelligence for Green Supply Chain Management in Energy Industry</p> <p>Faiz Mohiuddin Mulla (Virginia Social Services, USA); Ashok Kumar (Walmart, USA); Saurabh Goel (Accenture Llp, USA); Chandra Shekar Reddy Avula (USA); Sudarshan Prasad Nagavalli (PayPal, USA) [1571240773]</p>	



Track 3

Session C-3: Quantum Computing & Cryptography

Session time Thu, Apr 23 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Abdulla Alqaddoumi

Mr. S. Mahmood Sabt

No.	Title	Room 3
1	Evaluating the Quantum Capabilities in Factorization RSA Modulus Yaser Alkurdi (Princess Sumaya University for Technology, Jordan); Qasem Abu Al-Haija (Jordan University of Science and Technology, Jordan) [1571234616]	
2	Assessing Quantum Threats to Cryptographic Hash Structures in Cyber Defense Systems Using Grover-Based Oracle Modeling Santi Amalia Ar-Nur (Republic of Indonesia Defense University, Indonesia); Teddy Mantoro (Nusa Putra University, Indonesia) [1571251089]	
3	Assessing Quantum Decryption Risks to Indonesian National Cryptographic Infrastructure Through Systematic Review and Mathematical Risk Modeling Rifandi Indrayudha Prawira (Indonesia Defense University, Indonesia); Teddy Mantoro (Nusa Putra University, Indonesia) [1571251102]	
4	Hybrid Classical-Quantum Password Security Evaluation Using Grover's Algorithm on Structured Search Spaces Md. Abdul Malek Sobuj (American International University - Bangladesh, Bangladesh); Sadia Akter (University of Dhaka, Bangladesh); Md. Faruk Abdullah Al Sohan (University of Malaya, Malaysia); Afroza Nahar (American International University-Bangladesh, Bangladesh) [1571253941]	
5	Comparative Efficiency Analysis of PQC Hash Algorithms (Ascon vs. SHA-3) on 64-bit Architecture for Military Data Integrity Systems Syaddad Aulia Rahman (Defense University, Indonesia); Teddy Mantoro (Nusa Putra University, Indonesia) [1571251133]	



Track 3

Session C-4: Optimization & Intelligent Algorithms

Session time Thu, Apr 23 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Nidal Dahman

Dr. A. Hamid Irhouma

No.	Title	Room 4
1	Fuzzy Clustering Multi-Objective Fault-Aware Test Suite Reduction A R Ramesh Kumar (SRM Institute of Science and Technology, India); Karthikeyan Udaichi (SRM Institute of Science and Technology, India) [1571239029]	
2	Comparative Analysis of Particle Swarm Optimization and Random Forest for DC Motor Parameter Identification Mengseu Pheng (National Polytechnic Institute of Cambodia, Cambodia); Channareth Srun (National Polytechnic Institute of Cambodia, Cambodia); Faizal Arya Samman (University of Hasanuddin, Indonesia); Seven Siren (NPIC, Cambodia); Chivon Choeung (National Polytechnic Institute of Cambodia, Cambodia) [1571250023]	
3	Time-Aware Soft Actor-Critic via Observation Augmentation for Robust Continuous Control Saeed Serwan Abdulsattar (University of Bahrain, Bahrain); Fayzeh Abdulkareem Jaber (University of Technology Bahrain & Arabian Gulf University, Bahrain); Hani Ibraheem Al-Balasmeh (University of Technology Bahrain, Bahrain); Mohab A Mangoud M (University of Bahrain, Bahrain) [1571250764]	
4	Leveraging TF-CHI Based Ranking Score to Optimizing Associative Knowledge Graphs Omar Saleh Hassan (University of Sharjah, United Arab Emirates); Hassan Sajwani (University of Sharjah, United Arab Emirates); Mohammad Al Hajeri (University of Sharjah, United Arab Emirates); Zaher Al Aghbari (University of Sharjah, United Arab Emirates) [1571250417]	
5	Machine Learning-Assisted Optimization of Photonic Crystal Fiber-Surface Plasmon Resonance (PCF-SPR) Sensors for Microplastic Detection Marinah Othman (Universiti Sains Islam Malaysia, Malaysia); Muhammad Hasif Saiful Ashik (Universiti Sains Islam Malaysia, Malaysia); Muhammad Firdaus Mohd Fadhri (Universiti Sains Islam Malaysia, Malaysia); Sarina Mansor (Multimedia University, Malaysia); Siti Nur Aisyah Binti Mohd Robi (Leave a Nest, Malaysia); Juliza Jamaludin (Universiti Sains Islam Malaysia, Malaysia); Khairul Nabilah Zainul Ariffin (Universiti Sains Islam Malaysia, Malaysia) [1571241312]	



Track 3

Session C-5: Knowledge Graphs & Data Engineering

Session time Thu, Apr 23 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Aysha Mohamed Sayed Ali
Noora Alromaihi

No.	Title	Room 5
1	RotatEAtt: Interpretable Knowledge Graph Embedding via Relation-Aware Residual Attention Gating Aisha Karamastaji (University of Sharjah, United Arab Emirates); Sana Aziz (University of Sharjah, United Arab Emirates); Tooba Naz (University of Sharjah, United Arab Emirates); Zaher Al Aghbari (University of Sharjah, United Arab Emirates) [1571250682]	
2	Customer Segmentation Using Multi-Time Layer RFM Analysis for Data-Driven Profit Optimization Yanuar Rafi Rahadian (Universitas Pembangunan Nasional Veteran Jawa Timur, Indonesia); Iffad Rakhmanhuda (Universitas Pembangunan Nasional Veteran Jawa Timur, Indonesia); Rarasmaya Indraswari (Institut Teknologi Sepuluh Nopember, Indonesia) [1571241158]	
3	A Baseline SMILES-Based Machine Learning Framework for Binary Drug-Drug Interaction Prediction A Baseline SMILES-Based Machine Learning Framework for Binary Drug-Drug Interaction Prediction Canan Koç (Firat University, Turkey); Fatih Özyurt (Firat University, Turkey) [1571241708]	
4	Tri-Modal Calibrated Ensemble Framework of Drug-Drug Interaction Prediction on Structural, Pharmacokinetic, and Transcriptomic Evidence Ridwan Marqas (Duhok Polytechnic University, Iraq & Software Engineering, Firat University, Turkey); Fatih Özyurt (Firat University, Turkey) [1571235323]	
5	Hybrid Feature Engineering and Artificial Neural Network for Mushroom Fruiting Bag Contamination Classification John Rovic Bacanto (Laguna State Polytechnic University, Philippines); Joed Michael C Meraña (Laguna State Polytechnic University, Philippines); Channa Marie Gabrielle B Simbajon (Laguna State Polytechnic University, Philippines); Mark Reden S Pacaon (Laguna State Polytechnic University - Siniloan Campus, Philippines) [1571241285]	



Track 6


Session C-6: Cybersecurity, Environmental Quality & Climate Data

Session time Thu, Apr 23 14:30-16:00 Asia/Bahrain

Session Chairs

Prof. Mustafa Aytekin

Dr. Abrar Habib

No.	Title	Room 6
1	Real-Time Detection of Obfuscated Ransomware Using Optimized Machine Learning for Critical Systems Abdullah Mohammed Sharaf (Taiz University, Yemen); Mogeab Saeed (Taiz University, Yemen); Saleem Ahmed Hezam Sallam Al-Azazi (Taiz University & International Organization for Migration IOM, Yemen) [1571236692]	
2	Coastal Water Quality Modelling Using AlphaEarth Embeddings: Insights from LazyPredict-Based Machine Learning Mehvish Bilal (King Fahad University of Petroleum and Minerals, Saudi Arabia) [1571240660]	
3	Hydroclimatic and Statistical Analysis of Streamflow Variability and Extremes in the Chattooga River Basin (USGS Station 02176930) Fuad Ahmad Musleh (University of Bahrain, Bahrain) [1571248862]	
4	Performance Analysis of Machine Learning Algorithms for Air Quality Index (AQI) Estimation Moattar Khanum (NED University of Engineering & Technology, Pakistan); Sadaf Zehra (FAST-National University of Computer and Emerging Sciences, Pakistan); Sumera Rajput (NED University of Engineering & Technology, Pakistan); Dr. Haider Ali (NED University of Engineering and Technology Karachi, Pakistan); Qaisar Mahmood (University of Bahrain, Bahrain) [1571253906]	



Track 3

Session C-7: Industrial AI & Applications

Session time Thu, Apr 23 14:30-16:00 Asia/Bahrain

Session Chairs

Dr. Nuha Jamal Alzayani

Amna Ebrahim

No.	Title	Room 7
1	<p>Data-Driven Modeling of Antibacterial Performance in Metal-Based Alloys Seza Dinibutun (International University of Science and Technology in Kuwait, Kuwait); Yousef Alshammari (Kuwait Institute for Scientific Research, Kuwait); Leandro Bolzoni (Waikato Centre for Advanced Materials. the University of Waikato, New Zealand) [1571241749]</p>	
2	<p>A Standardized CI/CD Framework for Machine Learning Operations: An Empirical Study and Conceptual Model Ammar Yusuf (Bahrain Polytechnic, Bahrain); Hasan Jaafar Ali (University of Bahrain, Bahrain); Jasim M. Alkawari (University of Bahrain, Bahrain); RathaaNasser H. ALajmi (University of Bahrain, Bahrain); Jafra Al-Ammari (University of Bahrain, Bahrain); Fawzi Abdulaziz Albalooshi (University of Bahrain & College of IT, Bahrain) [1571229790]</p>	
3	<p>Financial Fraud Detection: A Data Science and Machine Learning Comparative Study on Synthetic Transactions Md. Maruf Hossain Munna (American International University-Bangladesh, Bangladesh); Syeda Shakira Aktar (American International University-Bangladesh, Bangladesh); Faria Jaman Rimjim (American International University-Bangladesh, Bangladesh); Mohaimen Bin Noor (American International University-Bangladesh, Bangladesh) [1571249504]</p>	
4	<p>Machine Learning for Precise Identification of Z Boson to Muon-Antimuon Events in Data from the Compact Muon Solenoid Experiment Khalil Ebrahim AlTaweel (University of Bahrain, Bahrain); Mohammed Majid M Al Khalidy (University of Bahrain & Engineering College, Bahrain) [1571242519]</p>	



Scopus® IEEE Xplore®
Digital Library

International Conference of Frontiers of Engineering and Emerging Technologies (FET'26)

